ATTACHEMENT: 10

DRY CREEK WRF

LABORATORY
ANALYTICAL

VOLATILE SOLIDS %
(12 TIMES A YEAR)

TOTAL SOLIDS %
(12 TIMES A YEAR)

2013



ANALYTICAL RESULTS

DRY CREEK WWTP LABORATORY

Cheyenne BOPU 8911 Campstool Road Cheyenne, Wyoming 82007 Phone: 307-635-3163 Fax: 307-635-6833

Date Sampled: 11/25/13

Date Received: 11/25/13

Sample Location: Zone E

Sample Matrix: Compost

Sampled By: CB

Date Reported: 12/19/13

Date Fecal Analyzed: NA

Date Solids Analyzed: 11/25/13

Analyst(s): mw

EPA Method/Total Solids:

SM 19th Ed 2540B

EPA Method/Volatile Solids: SM 19th Ed 2540E

EPA Method/Fecal Coliform: SM 18th Ed 9221E (A-1 Media)

Row#	Total Solids %	Volatile Solids%	Fecal Coliform/ Dry Gram Sludge		
1	60.6	35.8	NA ·		
2	65.7	33.0	NA		
3	67.4	34.4	NA		
4	65.9	39.5	NA		
5	70.7	37.6	NA		

Comments:

All data meets QA/QC requirements; please see QA/QC files in Dry Creek Laboratory.

NA = Not Analyzed

Kent Loader, Laboratory Supervisor

Dry Creek WRF Laboratory For: TS & VS

Identification Reporting: No. WYSL - 22934

Permit No. WYG - <u>650002</u>

(Cheyenne BOPU) Dry Creek Water Reclamation Facility

Samples and Analytical

Quality Assurance/Quality Control OA/QC

Date: //~ 25-/3 | Time: //(/5 | [] AM/] PM

Analytical Sampling Records (Cheyenne BOPU) Dry Creek WRF Laboratory

[] Dates and time of samples collected
[] Sampling location documented
[] Sampling types appropriate
[] Sampling volumes recorded
[] Name of person sampling
[] Types of sampling containers
[] Methods of preservation
[] Sampling quality assurance/ quality control QA/QC available
[] Pollutant limits red flagged if over mg/kg (Table 1,2,3,4 and Section 503.13) (Class A and B Biosolids)
[] Certification statement signed with each laboratory analytical report:
1. Pathogen reduction
2. Vector attraction reduction operates at Dry Creek WRF analysis samples. Results from daily sheets and results, recorded daily.
3. Management Practices
4. Site restrictions
[] Class A sludge: average temperature, (volatile solids percent) and total solids Dry sludge) once a month. Turn rows once a month, <u>weather permitting</u> .
[] Chain of custody recorded
Date: //- 25-13 Time: //:/5 [] AM [] PM

Analytical Records From: (Cheyenne BOPU) Dry Creek WRF To: (Cheyenne BOPU) Dry Creek WRF Laboratory

[] Date and time of samples analysis
[] Name of analyst
[] All analyses are reported on dry weight basis
[] Dry Creek WRF Laboratory 8911 Campstool Rd. Cheyenne, WY 82007 Ph: 307-635-3163 Fax: 307-635-6833
[] Analytical quality assurance/quality control (QA/QC) available
[] Analytical results available
[] Chain of custody record
-

Analytical Records From: (Cheyenne BOPU) Dry Creek WRF To: (Cheyenne BOPU) Dry Creek WRF Laboratory

	Date and time of sample
[]	Name of analyst
	Analytical methods used
	Analyses and calculation results properly documented or verified
	All analysis are reported on dry weight basis with the exception of volatile solids or total solids in percent. (1quart plastic bag 450 grams) (7 quart plastic bags 3150 grams).
	Volatile solids and total solids samples need to be analyzed six times a year for Class B Biosolids and 12 times a year for Class A Biosolids.
[]	Analytical quality assurance/quality control (QA/QC) available
	Analytical results available
[]	Chain of custody record

Zone: E | Rows: / - 5 | Date: //-25-/3 | Time: // 5 | [] AMP[] PM

Analytical Sample Containers From: (Cheyenne BOPU) Dry Creek WRF To: (Cheyenne BOPU) Dry Creek WRF Laboratory

Dry Sludge for fecal results in MPN, and percent solids for Class A or Class B Biosolids. 1 quart Plastic bags 450 grams: 7 Quart Plastic bags total of 3150 grams. Fecal samples and results are analyzed at the Dry Creek WRF Laboratory in with six hours of the holding time. The results of fecal samples in (MPN) and (percent solids) need to be analyzed in, *February, April, June, August, October, and December. **January, March, May, July, September and November; test for TS and VS. Class A test for Helminth ova density limits > 1 egg/4g TS; Enteric virus density limits of > 1 PFU/4g

- 1. *' **Class A sludge < 1000 MPN/gram. (Test 12 times a year for TS and VS).
- 2. * Class B sludge < 2,000,000 MPN/gram
- 3. Percent solids, 75 % or better for Class A Biosolids and Class B Biosolids.
- 4. Chain of custody record

Zone: F | Rows: 1 - 5 | Date: 1/-25-13 | Time: 1/15 | [] AM [] PM

Project Name: 1310501id5.
Location: Dry Creek WRF.
Address: 89 11 Camps Toulks.
City: Cheyenne State: Wy Zip Code: 82007.
Samples Collected by: Charles Bushes [Date/Time: 11-25-13/11:15.74]
Analytical Certification
This certification must be completed by the Analytical Laboratory performing service for the Cheyenne Board of Public Utilities and submitted with each "Analytical Report.
"I certify that these analysis and resulting report (s) were prepared under my direction and supervision in accordance with a system designed to assure that qualified personal properly analyze all samples and accurately report the results. I certify that all analysis were performed in accordance with method approved for wastewater under the latest revision to 40 CFR Part 503 Sludge Regulation. Based on my inquiry of the person or persons who manage the system, or those person directly responsible for analyzing, the wastewater samples and generating the report (s), the analysis, report, and information submitted is to the best on my knowledge and belief, true, accurate, and completed."
Name of Laboratory: Hy y Creek war.
Address: 89/1 Camps Fool Rd.
City: Cheyenne State: Wy Zip Code: 82007.
Name of Analyst: Kont Joch.
This Certification is signed by:
Date: - 7 - 4 Time:



Chain of Custody and Analytical Request Record PLEASE PRINT CLEARLY, provide as much information as possible

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Client's Name: DryC	OPE L	UL/Conta	act Name:	Met	15	111 A	11/		Sampler's	Name (if o	ther than Contact):_	
Report Required For:	1 10/10 1	1/16		Number of Containers	ANAL	YSIS	REQU	ESTE		Sample	Other Information	Analysis Completed
2010 E ROWS 1-5			Sample Type A W S V B O Air <u>W</u> ater Soils/Solids Vegetation Bioassay					HNO ₃ H ₂ SO ₄ 4°C HCL None	Grab or Composite	(pH, Field Analysis, etc.)	Yes / No (Lab use only)	
SAMPLE IDENTIFIC (Name, Location, et		Collection Date	Collection Time	<u>O</u> ther MATRIX	7	anders.						
1 201 PF No	(U)	カーコラ カラ	AM	13165AC	1 11 1				MAH	G		
2	12			7								
3	3											
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5	4	J	7,	V	1							
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Custody Record MUST be	quished by:	it la	bel	Date/Time/	1-23-	13	Receive	d by:	(10)			Date/Time:
Signed	ole Disposal:	Return to	client:			lispos	al:		<i>(</i>)	2	Log# . *	735

Copies to:

White - Book in Laboratory

Yellow - Laboratory Hard Copy

Pink - Client



ANALYTICAL RESULTS

DRY CREEK WWTP LABORATORY

Cheyenne BOPU 8911 Campstool Road Cheyenne, Wyoming 82007 Phone: 307-635-3163 Fax: 307-635-6833

Date Sampled: 11/25/13

Date Received: 11/25/13 Sample Location: Zone D

Sample Matrix: Compost

Sampled By: CB

Date Reported: 12/19/13 Date Fecal Analyzed: NA

Date Solids Analyzed: 11/25/13

Analyst(s): mw

EPA Method/Total Solids:

SM 19th Ed 2540B

EPA Method/Fecal Coliform: SM 18th Ed 9221E (A-1 Media)

EPA Method/Volatile Solids: SM 19th Ed 2540E

Row#	Total Solids %	Volatile Solids%	Fecal Coliform/ Dry Gram Sludge		
1	60.8	34.8	NA ·		
2	(0.0	27.4	NTA		

1	60.8	34.8	NA ·
2	62.0	37.4	NA
3	62.9	38.7	NA
4	59.7	40.9	NA
5	63.5	36.0	NA

Comments:

All data meets QA/QC requirements; please see QA/QC files in Dry Creek Laboratory. NA = Not Analyzed

Kent Loader, Laboratory Supervisor

Date:

Dry Creek WRF Laboratory For: TS & VS

Identification Reporting: No. WYSL - 22934

Permit No. WYG - 650002

(Cheyenne BOPU) Dry Creek Water Reclamation Facility

Samples and Analytical

Quality Assurance/Quality Control OA/QC

Date: 1/-25-13 | Time: 1/1/5 | [] AMI PM

Analytical Sampling Records (Cheyenne BOPU) Dry Creek WRF Laboratory

[] Dates and time of samples collected
[] Sampling location documented
[] Sampling types appropriate
[] Sampling volumes recorded
[] Name of person sampling
[] Types of sampling containers
[] Methods of preservation
[] Sampling quality assurance/ quality control QA/QC available
[] Pollutant limits red flagged if over mg/kg (Table 1,2,3,4 and Section 503.13) (Class A and B Biosolids)
[] Certification statement signed with each laboratory analytical report:
1. Pathogen reduction
2. Vector attraction reduction operates at Dry Creek WRF analysis samples. Results from daily sheets and results, recorded daily.
3. Management Practices
4. Site restrictions
[] Class A sludge: average temperature, (volatile solids percent) and total solids Dry sludge) once a month. Turn rows once a month, <u>weather permitting</u> .
[] Chain of custody recorded
Date: $1/-25-13$ Time: $1/(15)$ [] (M)] PM

Analytical Records From: (Cheyenne BOPU) Dry Creek WRF To: (Cheyenne BOPU) Dry Creek WRF Laboratory

[] Date and time of samples analysis
[] Name of analyst
[] All analyses are reported on dry weight basis
[] Dry Creek WRF Laboratory 8911 Campstool Rd. Cheyenne, WY 82007 Ph: 307-635-3163 Fax: 307-635-6833
[] Analytical quality assurance/quality control (QA/QC) available
[] Analytical results available
[] Chain of custody record

Date: //-25-/3 | Time: //(5-) | [] AM] PM

Analytical Records From: (Cheyenne BOPU) Dry Creek WRF To: (Cheyenne BOPU) Dry Creek WRF Laboratory

	Date and time of sample
()	Name of analyst
()	Analytical methods used
	Analyses and calculation results properly documented or verified
	All analysis are reported on dry weight basis with the exception of volatile solids or total solids in percent. (1quart plastic bag 450 grams) (7 quart plastic bags 3150 grams).
[]	Volatile solids and total solids samples need to be analyzed six times a year for Class B Biosolids and 12 times a year for Class A Biosolids.
	Analytical quality assurance/quality control (QA/QC) available
[]	Analytical results available
[]	Chain of custody record

Zone: 1 - 5 Date: 1/-25-13 Time: //[5] [] AM [] PM

Analytical Sample Containers From: (Cheyenne BOPU) Dry Creek WRF To: (Cheyenne BOPU) Dry Creek WRF Laboratory

Dry Sludge for fecal results in MPN, and percent solids for Class A or Class B Biosolids. 1 quart Plastic bags 450 grams: 7 Quart Plastic bags total of 3150 grams. Fecal samples and results are analyzed at the Dry Creek WRF Laboratory in with six hours of the holding time. The results of fecal samples in (MPN) and (percent solids) need to be analyzed in, *February, April, June, August, October, and December. **January, March, May, July, September and November; test for TS and VS. Class A test for Helminth ova density limits > 1 egg/4g TS; Enteric virus density limits of > 1 PFU/4g

- 1. *' **Class A sludge < 1000 MPN/gram. (Test 12 times a year for TS and VS).
- 2. * Class B sludge < 2,000,000 MPN/gram
- 3. Percent solids, 75 % or better for Class A Biosolids and Class B Biosolids.
- 4. Chain of custody record

Zone: 0 Rows: 1 - 5 Date: 1/ 2 5-/2 Time: 1/ 1/5 [] AM [] PM

Project Name: B10501125
Location: Dry Creek WRP.
Address: 891/ Camps Foul PR.d.
City: Cheycome State! V Zip Code: \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \
Samples Collected by: (htt Benkell(Date/Time: 11:25-13/1/1/5)
Analytical Certification
This certification must be completed by the Analytical Laboratory performing service for the Cheyenne Board of Public Utilities and submitted with each "Analytical Report.
"I certify that these analysis and resulting report (s) were prepared under my direction and supervision in accordance with a system designed to assure that qualified personal properly analyze all samples and accurately report the results. I certify that all analysis were performed in accordance with method approved for wastewater under the latest revision to 40 CFR Part 503 Sludge Regulation. Based on my inquiry of the person or persons who manage the system, or those person directly responsible for analyzing, the wastewater samples and generating the report (s), the analysis, report, and information submitted is to the best on my knowledge and belief, true, accurate, and completed."
Name of Laboratory: Dry Cveek WAF.
Address: 8911 - Camps Tool Rd.
City: Cheyenny State: Wy Zip Code: \$2007.
Name of Analyst: Leat Copie . This Certification is signed by:
Date: /- 7- (4 Time:] [] AM PM



Chain of Custody and Analytical Request Record
PLEASE PRINT CLEARLY, provide as much information as possible

Page /	of	/
<i>-</i>		

Client's Name: 11 4 (100)	Ontact Name:_	chet	Barbel	/ Sampler's Name (if	other than Contact):_	
Report Required For:	5	Number of ANALY	SIS REQUESTED	How Sample	Other	Analysis Completed
Report Required For: 13:0501, 1	51-5	Containers Sample Type A W S V B O Air Water Soils/Solids Yegetation Bioassay		HNO ₃ Grab H ₂ SO ₄ or HCL None	(pH, Field Analysis, etc.)	
SAMPLE IDENTIFICATION (Name, Location, etc.)	Collection Collection Date Time	Other MATRIX				
120N/P. D ROW!	11-25 10:00 13 HM	Mastic Distale		MAG		
2						
3 3						
4						
5 1, 1, 1,	1. 1	1 11		1		
6						
7						
Custody Record MUST be	et Barbell	Date/Time: 11-25		Control of the second		Date/Time:
Signed Sample Disposal:	Return to client:	Lab dis	posal:		Log#	754

Copies to:

White - Book in Laboratory

Yellow - Laboratory Hard Copy

Pink - Client

Attachment: #4. Dry Creek Water Reclamation Facility

F. Pathogen reduction is accomplished through anaerobic digestion. The primary and secondary digested sludge is treated in the absence of air for mean cell residence time and temperature between 25 and 35 days at 92 to 100 degrees Fahrenheit. Air dried sludge is obtained with a tractor aerator on paved drying beds and on site unpaved storage area in windrows that are turned approximately once a month dependant on the weather conditions.

The Biosolids production (dry weight) at the Dry Creek WRF is over 1500 metric tons a year. Therefore samples are collected six times a year (February, April, May, June, August, October, and December). The laboratories analyze the dry samples for metals, nutrients, organics pathogens, volatile solids and total solids.

CERTIFICATION STATEMENT

I certify under the penalty of law, that the pathogen requirements in Part I.C.3, the management practices in Part I.D (if necessary) (including the practice in part I.D.13 if the table 4 annual pollutant limits are used) and the site restrictions in Part I.C.2 (if necessary) have been met. This determination has been made under my direction and supervision in accordance with the system designed to assure that qualified personnel properly gather and evaluate the information used to determine that pathogen requirements, the vector attraction reduction requirements, the management practices and the site restrictions have been met. I am aware that there are significant penalties for false certification including the possibility of imprisonment.

Signature

Jim Hughes, Manager

Water Reclamation Division

Attachment: #5. Dry Creek Water Reclamation Facility

G. Vector attraction reduction requirements are met through anaerobic digestion when there is thirty eight percent or more reduction in volatile solids. Volatile solids destruction is measured weight by volume average ((Vol. Solids Reduction = VS in - VS out / (VS in -((VS in * VS out)) (Use Average). The sludge is also air dried in windrows for further vector attraction reduction. The dry solids in windrows are between 65% to 80% total volatile solids reduction before land application.

RE: Flows From: Primary North and Primary South Raw sludge Average: Total solids (change % to Mg/l (10000) (NRS & SRS): Total Vol Solids (NRS & SRS): Total C-2 (wasting) cake flow gal: C-1 (digested) Solids (mg/L) cake: C-1 Vol solids cake (mg/L): C-2 solids cake (mg/L): C-2 Vol Solids cake (mg/L) Cake flow from Rotary Drum Thicker to digester.

CERTIFICATION STATEMENT

I certify under the penalty of law, that the pathogen requirements in Part I.C.2, one of the vector attraction reduction alternatives in Part I.C.3, the (if necessary) (including practices in part I.D practices in Part I.D.13 if the table 4 annual pollutant limits are used) and the site restrictions in part I.C.2 (if necessary) have been met. This determination has been made under my direction and supervision in accordance with the information used to determine that the pathogen requirements, the vector attraction reduction requirements, the management practices and the site restrictions have been met. I am aware that there are significant penalties for false certification including the possibility of imprisonment.

Signature

Jim Hughes, Manager

Water Reclamation Division

H. Best management practices are accomplished by applying biosolids at a whole sludge application rate that is less than or equal to the agronomic rate for the specific site and plant species. The Biosolids are applied so that it does not adversely affect a threatened or endangered species.

Biosolids are not dispersed on sites that are flooded or snow covered, frozen ground with a slope of three percent or more to prevent run off into wetland or surface water. A buffer zone of thirty-five feet from waterways, stock wells, and surface water is observed. Biosolids land applications are prohibited to sites where the available phosphorous content of the existing soil exceeds 400 pounds per acre.

Stored Biosolids on the plant facility remain in windrows for two years or less. The Biosolids are land applied in the winter, spring and fall of the year, weather permitting. Biosolids and soil are analytically tested before disposal. Cheyenne's sludge management practice ensures compliance with both Federal and State parameters and provides for long term Biosolids procedures with little or no detriment to the environment, while enhancing the native grass and field crop production of those participating ranchers and farmers who utilize Biosolids as a fertilizer supplement and soil conditioner.

CERTIFICATION STATEMENT

I certify under the penalty of law that the pathogen requirements in Part I.C.2, one of the vector attraction reduction alternatives in Part I.C.3, the management practices in part I.D (if necessary) (including in the practices in Part I.D.13 if the table 4 annual pollutant limits are used) and the site restrictions in Part I.C.2 (if necessary) have been met. This determination has been made under my direction and supervision in accordance with the system designed to assure that qualified personal properly gather and evaluate the information used to determine that the pathogen requirements, the management practices and the site restrictions have been met. I am aware that there are significant penalties for false certification including the possibility of imprisonment.

Signature

Jim Hughes, Manager

Water Reclamation Division

Attachment: #7.

Dry Creek Water Reclamation Facility

I. Site restrictions are first achieved through the quality of sewage sludge product which has been stabilized to reduce pathogenic organisms, which has been dried to a solids concentration of sixty percentile or greater and contains no hazardous or toxic compounds or chemicals in concentrations which exceed those authorized by the USA EPA REGION VIII and WYOMING DEQ for land application in Part C.1, Specific Limitations and Self Monitoring Requirements and Chemical Pollutant Limitations.

The dry sludge that is produced is class \underline{A} and \underline{B} which are applied primarily to range land. Before applying sewage sludge on rangeland, pastureland, farm land, or fields, soil samples have been collected and have had the appropriate soil analysis conducted.

The <u>Class B</u> Sludge with respect to pathogens has been in compliance with the entire site restrictions listed in Part I.C.2. No sludge or material derived from sludge exceeds the limits in Table 3 Part I.C.1. The <u>Class A</u> pathogen reduction limits in Part I.C.2 meets the first 4 vector attraction reduction alternatives in Part I.C.3. There are sufficient management practices used to prevent malfunctions and deterioration, operator errors and discharges which may cause or lead to the release of sludge to the environment, a threat to human health or a nuisance.

CERTIFICATION STATEMENT

I certify under the penalty of law, that the pathogen requirements in Part I.C.2, one of the vector attraction reduction alternatives in Part I.C.3, the management practices in Part I.D (if necessary) including the practice in Part I.D.13 if the table 4 annual pollutant limits are used) and the site restrictions in Part I.C.2 (if necessary) have been met. This determination has been made under my direction and supervision in accordance with the system designed to assure that qualified personnel properly gather and evaluate the information used to determine that the pathogen requirements, the vector attractions reduction requirements, the management practices and the restrictions have been met. I am aware that there are significant penalties for false certification including the possibility of imprisonment.

Signature |

Jim()Hughes, Manager



ANALYTICAL RESULTS

DRY CREEK WWTP LABORATORY

Cheyenne BOPU 8911 Campstool Road Cheyenne, Wyoming 82007 Phone: 307-635-3163 Fax: 307-635-6833

Date Sampled: 11/25/13

Date Received: 11/25/13

Sample Matrix: Compost

Sample Location: Zone C

Sampled By: CB

Date Reported: 12/19/13 Date Fecal Analyzed: NA

Date Solids Analyzed: 11/25/13

Analyst(s): mw

EPA Method/Total Solids:

SM 19th Ed 2540B

EPA Method/Volatile Solids: SM 19th Ed 2540E

EPA Method/Fecal Coliform: SM 18th Ed 9221E (A-1 Media)

Row#	Total Solids %	Volatile Solids%	Fecal Coliform/ Dry Gram Sludge
1	65.6	31.5	NA ·
2	74.8	33.1	NA
3	60.8	33.4	NA
4	66.2	41.7	NA
5	73.8	44.0	NA
6	61.7	44.0	NA
7	70.4	53.6	NA

Comments:

All data meets QA/QC requirements; please see QA/QC files in Dry Creek Laboratory. NA = Not Analyzed

Kent Loader, Laboratory Supervisor

Page 1 of 1

Dry Creek WRF Laboratory For: TS & VS

Identification Reporting: No. WYSL - 22934

Permit No. WYG - 650002

(Cheyenne BOPU) Dry Creek Water Reclamation Facility

Samples and Analytical

Quality Assurance/Quality Control OA/QC

Date: $\frac{1}{25}$ Time: $\frac{1}{5}$ PM

Analytical Sampling Records (Cheyenne BOPU) Dry Creek WRF Laboratory

[] Dates and time of samples collected
[] Sampling location documented
[] Sampling types appropriate
[] Sampling volumes recorded
[] Name of person sampling
[] Types of sampling containers
[] Methods of preservation
[] Sampling quality assurance/ quality control QA/QC available
[] Pollutant limits red flagged if over mg/kg (Table 1,2,3,4 and Section 503.13) (Class A and B Biosolids)
[] Certification statement signed with each laboratory analytical report:
1. Pathogen reduction
2. Vector attraction reduction operates at Dry Creek WRF analysis samples. Results from daily sheets and results, recorded daily.
3. Management Practices
4. Site restrictions
[] Class A sludge: average temperature, (volatile solids percent) and total solids Dry sludge) once a month. Turn rows once a month, <u>weather permitting</u> .
[] Chain of custody recorded
Date: //-25-/3 Time: // (/5 [] AM [] PM

Analytical Records From: (Cheyenne BOPU) Dry Creek WRF To: (Cheyenne BOPU) Dry Creek WRF Laboratory

[] Date and time of samples analysis
[] Name of analyst
[] All analyses are reported on dry weight basis
[] Dry Creek WRF Laboratory 8911 Campstool Rd. Cheyenne, WY 82007 Ph: 307-635-3163 Fax: 307-635-6833
[] Analytical quality assurance/quality control (QA/QC) available
[] Analytical results available
[] Chain of custody record

Date: 1/1 25-13 | Time: 1/15 | [] AM/ PM

Analytical Records From: (Cheyenne BOPU) Dry Creek WRF To: (Cheyenne BOPU) Dry Creek WRF Laboratory

[] Date and time of sample
[] Name of analyst
[] Analytical methods used
[] Analyses and calculation results properly documented or verified
[] All analysis are reported on dry weight basis with the exception of volatile solids or total solids in percent. (1quart plastic bag 450 grams) (7 quart plastic bags 3150 grams).
[] Volatile solids and total solids samples need to be analyzed six times a year for Class B Biosolids and 12 times a year for Class A Biosolids.
[] Analytical quality assurance/quality control (QA/QC) available
[] Analytical results available
[] Chain of custody record

Zone: C | Rows: 1 - 7 | Date: 1/-25-13 | Time: 1/1/5 [AM | PM

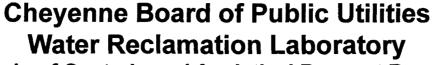
Analytical Sample Containers From: (Cheyenne BOPU) Dry Creek WRF To: (Cheyenne BOPU) Dry Creek WRF Laboratory

Dry Sludge for fecal results in MPN, and percent solids for Class A or Class B Biosolids. 1 quart Plastic bags 450 grams: 7 Quart Plastic bags total of 3150 grams. Fecal samples and results are analyzed at the Dry Creek WRF Laboratory in with six hours of the holding time. The results of fecal samples in (MPN) and (percent solids) need to be analyzed in, *February, April, June, August, October, and December. **January, March, May, July, September and November; test for TS and VS. Class A test for Helminth ova density limits > 1 egg/4g TS; Enteric virus density limits of > 1 PFU/4g

- 1. *' **Class A sludge < 1000 MPN/gram. (Test 12 times a year for TS and VS).
- 2. * Class B sludge < 2,000,000 MPN/gram
- 3. Percent solids, 75 % or better for Class A Biosolids and Class B Biosolids.
- 4. Chain of custody record

Zone: C | Rows: 1 - 7 | Date: 1/-25-13 | Time: 1 / 5 [] AM [] PM

Project Name: 13, 050 1; 15
Location: Dry Creek WRF.
Address: 8911 Campstoul Rd.
City: Cheyenne State: [1] Zip Code: 32007.
Samples Collected by: Child BulbW. [Date/Time: 1/-25-13/11/15]
Analytical Certification
This certification must be completed by the Analytical Laboratory performing service for the Cheyenne Board of Public Utilities and submitted with each "Analytical Report.
"I certify that these analysis and resulting report (s) were prepared under my direction and supervision in accordance with a system designed to assure that qualified personal properly analyze all samples and accurately report the results. I certify that all analysis were performed in accordance with method approved for wastewater under the latest revision to 40 CFR Part 503 Sludge Regulation. Based on my inquiry of the person or persons who manage the system, or those person directly responsible for analyzing, the wastewater samples and generating the report (s), the analysis, report, and information submitted is to the best on my knowledge and belief, true, accurate, and completed."
Name of Laboratory: 13/050/65
Address: 89// Campstalld.
City: Cheyeme State: Ly Zip Code: 7207.
Name of Analyst: Low J.
This Certification is signed by:
Date: 1-7-14] Time: [] AM PPM



Chain of Custody and Analytical Request Record
PLEASE PRINT CLEARLY, provide as much information as possible

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Client's Name: <u>∭ ௴</u>	6.V. PKW1	Cont	act Name:	NIT	$\mathcal{N}_{\mathcal{R}}$	uRi		Sampler's	Name (if o	ther than Contact):_	
Report Required F	For: 1), UN 1,	15		Number of Containers			QUESTED	How Preserved	Sample <u>Type</u>	Other Information	Analysis Completed
7 un	o C Rou	001-7		Sample Type A W S V B O Air Water Soils/Solids Yegetation Bioassay			H₂SO₄ or	Grab or Composite	(pH, Field Analysis, etc.)	Yes / No (Lab use only)	
SAMPLE IDEN (Name, Loca		Collection Date	Collection Time	<u>Q</u> ther MATRIX	1						
17-6112	Rowl	11-15	10.00 12,M	BANGA.				NA	6		
2	1 2										
3	13										
4	14										
5											
6	6										
7	117	y	1.		77			1	177		
Custody	Relinquished by:	et Van	her	Date/Time:/	1-25-	3 Rec	ceived by:	1			Date/Time:
Record <u>MUST</u> be		<u> </u>		11:1	A	n-1	TIME	While			
Signed	Sample Disposal:	Return to		/ D	_ Lab di	sposal:_		[] [] [] []	7	Log#	753

Copies to:

White - Book in Laboratory

Yellow - Laboratory Hard Copy

Pink - Client

Attachment: #4. Dry Creek Water Reclamation Facility

F. Pathogen reduction is accomplished through anaerobic digestion. The primary and secondary digested sludge is treated in the absence of air for mean cell residence time and temperature between 25 and 35 days at 92 to 100 degrees Fahrenheit. Air dried sludge is obtained with a tractor aerator on paved drying beds and on site unpaved storage area in windrows that are turned approximately once a month dependant on the weather conditions.

The Biosolids production (dry weight) at the Dry Creek WRF is over 1500 metric tons a year. Therefore samples are collected six times a year (February, April, May, June, August, October, and December). The laboratories analyze the dry samples for metals, nutrients, organics pathogens, volatile solids and total solids.

CERTIFICATION STATEMENT

I certify under the penalty of law, that the pathogen requirements in Part I.C.3, the management practices in Part I.D (if necessary) (including the practice in part I.D.13 if the table 4 annual pollutant limits are used) and the site restrictions in Part I.C.2 (if necessary) have been met. This determination has been made under my direction and supervision in accordance with the system designed to assure that qualified personnel properly gather and evaluate the information used to determine that pathogen requirements, the vector attraction reduction requirements, the management practices and the site restrictions have been met. I am aware that there are significant penalties for false certification including the possibility of imprisonment.

Signature

Jim Hughes, Manager

Water Reclamation Division

Attachment: #5. Dry Creek Water Reclamation Facility

G. Vector attraction reduction requirements are met through anaerobic digestion when there is thirty eight percent or more reduction in volatile solids. Volatile solids destruction is measured weight by volume average ((Vol. Solids Reduction = VS in - VS out / (VS in -((VS in * VS out)) (Use Average). The sludge is also air dried in windrows for further vector attraction reduction. The dry solids in windrows are between 65% to 80% total volatile solids reduction before land application.

RE: Flows From: Primary North and Primary South Raw sludge Average: Total solids (change % to Mg/l (10000) (NRS & SRS): Total Vol Solids (NRS & SRS): Total C-2 (wasting) cake flow gal: C-1 (digested) Solids (mg/L) cake: C-1 Vol solids cake (mg/L): C-2 solids cake (mg/L): C-2 Vol Solids cake (mg/L) Cake flow from Rotary Drum Thicker to digester.

CERTIFICATION STATEMENT

I certify under the penalty of law, that the pathogen requirements in Part I.C.2, one of the vector attraction reduction alternatives in Part I.C.3, the management practices in part I.D (if necessary) (including practices in Part I.D.13 if the table 4 annual pollutant limits are used) and the site restrictions in part I.C.2 (if necessary) have been met. This determination has been made under my direction and supervision in accordance with information used to determine that the pathogen requirements, the vector attraction reduction requirements, the management practices and the site restrictions have been met. I am aware that there are significant penalties for false certification including possibility the imprisonment.

Signature

Jim Hughes, Manager

Water Reclamation Division

H. Best management practices are accomplished by applying biosolids at a whole sludge application rate that is less than or equal to the agronomic rate for the specific site and plant species. The Biosolids are applied so that it does not adversely affect a threatened or endangered species.

Biosolids are not dispersed on sites that are flooded or snow covered, frozen ground with a slope of three percent or more to prevent run off into wetland or surface water. A buffer zone of thirty-five feet from waterways, stock wells, and surface water is observed. Biosolids land applications are prohibited to sites where the available phosphorous content of the existing soil exceeds 400 pounds per acre.

Stored Biosolids on the plant facility remain in windrows for two years or less. The Biosolids are land applied in the winter, spring and fall of the year, weather permitting. Biosolids and soil are analytically tested before disposal. Cheyenne's sludge management practice ensures compliance with both Federal and State parameters and provides for long term Biosolids procedures with little or no detriment to the environment, while enhancing the native grass and field crop production of those participating ranchers and farmers who utilize Biosolids as a fertilizer supplement and soil conditioner.

CERTIFICATION STATEMENT

I certify under the penalty of law that the pathogen requirements in Part I.C.2, one of the vector attraction reduction alternatives in Part I.C.3, the management practices in part I.D (if necessary) (including in the practices in Part I.D.13 if the table 4 annual pollutant limits are used) and the site restrictions in Part I.C.2 (if necessary) have been met. This determination has been made under my direction and supervision in accordance with the system designed to assure that qualified personal properly gather and evaluate the information used to determine that the pathogen requirements, the management practices and the site restrictions have been met. I am aware that there are significant penalties for false certification including the possibility of imprisonment.

Signature

Jim Hughes, Manager

Water Reclamation Division

Attachment: #7.

Dry Creek Water Reclamation Facility

I. Site restrictions are first achieved through the quality of sewage sludge product which has been stabilized to reduce pathogenic organisms, which has been dried to a solids concentration of sixty percentile or greater and contains no hazardous or toxic compounds or chemicals in concentrations which exceed those authorized by the USA EPA REGION VIII and WYOMING DEQ for land application in Part C.1, Specific Limitations and Self Monitoring Requirements and Chemical Pollutant Limitations.

The dry sludge that is produced is class \underline{A} and \underline{B} which are applied primarily to range land. Before applying sewage sludge on rangeland, pastureland, farm land, or fields, soil samples have been collected and have had the appropriate soil analysis conducted.

The Class B Sludge with respect to pathogens has been in compliance with the entire site restrictions listed in Part I.C.2. No sludge or material derived from sludge exceeds the limits in Table 3 Part I.C.1. The Class A pathogen reduction limits in Part I.C.2 meets the first 4 vector attraction reduction alternatives in Part I.C.3. There are sufficient management practices used to prevent malfunctions and deterioration, operator errors and discharges which may cause or lead to the release of sludge to the environment, a threat to human health or a nuisance.

CERTIFICATION STATEMENT

I certify under the penalty of law, that the pathogen requirements in Part I.C.2, one of the vector attraction reduction alternatives in Part I.C.3, the management practices in Part I.D (if necessary) including the practice in Part I.D.13 if the table 4 annual pollutant limits are used) and the site restrictions in Part I.C.2 (if necessary) have been met. This determination has been made under my direction and supervision in accordance with the system designed to assure that qualified personnel properly gather and evaluate the information used to determine that the pathogen requirements, the vector attractions reduction practices requirements, the management and the restrictions have been met. I am aware that there are significant penalties for false certification including the possibility of imprisonment.

Signature /

Signature \(\)
Jim \(\)
Hughes, Manager



ANALYTICAL RESULTS

DRY CREEK WWTP LABORATORY

Cheyenne BOPU 8911 Campstool Road Cheyenne, Wyoming 82007 Phone: 307-635-3163 Fax: 307-635-6833

Date Sampled: 11/25/13

Date Received: 11/25/13 Sample Location: Zone A

Sample Matrix: Compost

Sampled By: CB

Date Reported: 12/19/13 Date Fecal Analyzed: NA

Date Solids Analyzed: 11/25/13

Analyst(s): mw

EPA Method/Total Solids: SN

SM 19th Ed 2540B

EPA Method/Volatile Solids: SM 19th Ed 2540E

EPA Method/Fecal Coliform: SM 18th Ed 9221E (A-1 Media)

Fecal Coliform/

Row #	Total Solids %	Volatile Solids%	Dry Gram Sludge
1	74.7	20.9	NA
. 2	73.9	24.1	NA ·
3	62.8	29.8	NA
4	64.2	39.2	NA
5	58.1	32.1	NA
6	56.6	35.1	NA
7	63.1	33.3	NA
8	57.6	47.5	NA
9	58.9	46.6	NA

Comments:

All data meets QA/QC requirements; please see QA/QC files in Dry Creek Laboratory. NA = Not Analyzed

Kerit Loader, Laboratory Supervisor

Date:

Dry Creek WRF Laboratory For: TS & VS

Identification Reporting: No. WYSL - 22934

Permit No. WYG - <u>650002</u>

(Cheyenne BOPU) Dry Creek Water Reclamation Facility

Samples and Analytical

Quality Assurance/Quality Control OA/QC

Date: 11-25-13 | Time: 11:15 | []AM [] PM

Analytical Sampling Records (Cheyenne BOPU) Dry Creek WRF Laboratory

[] Dates and time of samples collected
[] Sampling location documented
[] Sampling types appropriate
[] Sampling volumes recorded
[] Name of person sampling
[] Types of sampling containers
[] Methods of preservation
[] Sampling quality assurance/ quality control QA/QC available
[] Pollutant limits red flagged if over mg/kg (Table 1,2,3,4 and Section 503.13) (Class A and B Biosolids)
[] Certification statement signed with each laboratory analytical report:
1. Pathogen reduction
2. Vector attraction reduction operates at Dry Creek WRF analysis samples. Results from daily sheets and results, recorded daily.
3. Management Practices
4. Site restrictions
[] Class A sludge: average temperature, (volatile solids percent) and total solids Dry sludge) once a month. Turn rows once a month, <u>weather permitting</u> .
[] Chain of custody recorded
Date: 1/-25-13 Time: 1/5/5 []AM/] PM

Analytical Records From: (Cheyenne BOPU) Dry Creek WRF To: (Cheyenne BOPU) Dry Creek WRF Laboratory

[] Date and time of samples analysis
[] Name of analyst
[] All analyses are reported on dry weight basis
[] Dry Creek WRF Laboratory 8911 Campstool Rd. Cheyenne, WY 82007 Ph: 307-635-3163 Fax: 307-635-6833
[] Analytical quality assurance/quality control (QA/QC) available
[] Analytical results available
[] Chain of custody record

Analytical Records From: (Cheyenne BOPU) Dry Creek WRF To: (Cheyenne BOPU) Dry Creek WRF Laboratory

	Date and time of sample
[]	Name of analyst
[]	Analytical methods used
	Analyses and calculation results properly documented or verified
[]	All analysis are reported on dry weight basis with the exception of volatile solids or total solids in percent. (1quart plastic bag 450 grams) (7 quart plastic bags 3150 grams).
[]	Volatile solids and total solids samples need to be analyzed six times a year for Class B Biosolids and 12 times a year for Class A Biosolids.
[]	Analytical quality assurance/quality control (QA/QC) available
	Analytical results available
[]	Chain of custody record

Zone: A Rows: 1 - 9 Date: 1/25-13 Time: 1/15 [] AM [] PM

Analytical Sample Containers From: (Cheyenne BOPU) Dry Creek WRF To: (Cheyenne BOPU) Dry Creek WRF Laboratory

Dry Sludge for fecal results in MPN, and percent solids for Class A or Class B Biosolids. 1 quart Plastic bags 450 grams: 7 Quart Plastic bags total of 3150 grams. Fecal samples and results are analyzed at the Dry Creek WRF Laboratory in with six hours of the holding time. The results of fecal samples in (MPN) and (percent solids) need to be analyzed in, *February, April, June, August, October, and December. **January, March, May, July, September and November; test for TS and VS. Class A test for Helminth ova density limits > 1 egg/4g TS; Enteric virus density limits of > 1 PFU/4g

- 1. *' **Class A sludge < 1000 MPN/gram. (Test 12 times a year for TS and VS).
- 2. * Class B sludge < 2,000,000 MPN/gram
- 3. Percent solids, 75 % or better for Class A Biosolids and Class B Biosolids.
- 4. Chain of custody record

Zone: A Rows: 1 - 9 Date: 11 25-B Time: 1/1/5 [] 6M [] PM

Project Name: 13/050/id5.
Location: Dry Creek with.
Address: 89 11 Camps tool Rd.
City: Cheyenny State: Wy Zip Code: 8207.
Samples Collected by: Ch It Beub W. [Date/Time: 1) 125-13/1/15 Am
Analytical Certification
This certification must be completed by the Analytical Laboratory performing service for the Cheyenne Board of Public Utilities and submitted with each "Analytical Report.
"I certify that these analysis and resulting report (s) were prepared under my direction and supervision in accordance with a system designed to assure that qualified personal properly analyze all samples and accurately report the results. I certify that all analysis were performed in accordance with method approved for wastewater under the latest revision to 40 CFR Part 503 Sludge Regulation. Based on my inquiry of the person or persons who manage the system, or those person directly responsible for analyzing, the wastewater samples and generating the report (s), the analysis, report, and information submitted is to the best on my knowledge and belief, true, accurate, and completed."
Name of Laboratory: Ny Cveck WRF.
Address: 89// Camps Tool R.L.
City: Cheyenne State: Wy Zip Code: 82007.
Name of Analyst: Kent Load.
Name of Analyst: Kent Load. This Certification is signed by: .
Date: 1-7-14] Time:] [] AM YPM

Cheyenne Board of Public Utilities Water Reclamation Laboratory

Chain of Custody and Analytical Request Record PLEASE PRINT CLEARLY, provide as much information as possible

	1		
Page		of	

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Client's Name:	Contact Name	: Ast R	<u> </u>	mpler's Name (if ot	her than Contact):
Report Required For:		Number of ANALYSIS		How Sample	Other Analysis
V 20119 201	A Day A Day			eserved Type	Information Completed
•		Sample Type A W S V B O			, <u>-</u>
1-7		<u>Air Water</u>		HNO₃ Grab H₂SO₄ or	(pH, Field Analysis, Yes / No etc.) (Lab use only)
		Soils/Solids Yegetation Bioassay		4°C Composite HCL None	
SAMPLE IDENTIFICATION (Name, Location, etc.)	Collection Collection Date Time	Other MATRIX			
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Custody Record MUST be	t Kindun	Date/Time://->>	Received by:	vi	Date/Time:
Signed Sample Disposal:	Return to client:	Lab dispo			Log# 751

Copies to:

White - Book in Laboratory

Yellow - Laboratory Hard Copy

Pink - Client

Cheyenne Board of Public Utilities Water Reclamation Laboratory

Chain of Custody and Analytical Request Record PLEASE PRINT CLEARLY, provide as much information as possible

Page ____ of ____

Client's Name: 1 / Contact Nam														
Report Required F	or: γ) , γ , γ , 1	16		Number of Containers	AN	ALY	SIS	RE	QUES	STED	1	Sample	Other	Analysis
	Report Required For: 1000 1.15										Preserved	Type	Information	<u>Completed</u>
12011 e A Kawo 3-7				Sample Type AWSVBO				Ì			HNO ₃	Grab	(pH, Field Analysis,	Yes / No
				<u>Air Water</u> <u>Soils/Solids</u>	ļ						H₂SO₄	or	etc.)	(Lab use only)
				<u>Vegetation</u>	l	72					4°C HCL	Composite		·
CAMPIE IDEN	TIFICATION	Collection	Collection	<u>B</u> ioassay	M						None			2. 2. 2. 2. 3.
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Custody Record <u>MUST</u> be	Relinquished by:	it % o	well	Date/Time: /	1-1 14	6 7 111	13	Rece	eived I	by:				Date/Time:
Signed Signed	Sample Disposal:	Return to	client:		<u>. L</u>	ab d	ispos	al:					Log#	752

Copies to:

White - Book in Laboratory

Pink - Client

Attachment: #4. Dry Creek Water Reclamation Facility

F. Pathogen reduction is accomplished through anaerobic digestion. The primary and secondary digested sludge is treated in the absence of air for mean cell residence time and temperature between 25 and 35 days at 92 to 100 degrees Fahrenheit. Air dried sludge is obtained with a tractor aerator on paved drying beds and on site unpaved storage area in windrows that are turned approximately once a month dependant on the weather conditions.

The Biosolids production (dry weight) at the Dry Creek WRF is over 1500 metric tons a year. Therefore samples are collected six times a year (February, April, May, June, August, October, and December). The laboratories analyze the dry samples for metals, nutrients, organics pathogens, volatile solids and total solids.

CERTIFICATION STATEMENT

I certify under the penalty of law, that the pathogen requirements in Part I.C.3, the management practices in Part I.D (if necessary) (including the practice in part I.D.13 if the table 4 annual pollutant limits are used) and the site restrictions in Part I.C.2 (if necessary) have been met. This determination has been made under my direction and supervision in accordance with the system designed to assure that qualified personnel properly gather and evaluate the information used to determine that pathogen requirements, the vector attraction reduction requirements, the management practices and the site restrictions have been met. I am aware that there are significant penalties for false certification including the possibility of imprisonment.

Signature

Jim Hughes, Manager

Water Reclamation Division

Attachment: #5. Dry Creek Water Reclamation Facility

G. Vector attraction reduction requirements are met through anaerobic digestion when there is thirty eight percent or more reduction in volatile solids. Volatile solids destruction is measured weight by volume average ((Vol. Solids Reduction = VS in - VS out / (VS in -((VS in * VS out)) (Use Average). The sludge is also air dried in windrows for further vector attraction reduction. The dry solids in windrows are between 65% to 80% total volatile solids reduction before land application.

RE: Flows From: Primary North and Primary South Raw sludge Average: Total solids (change % to Mg/l (10000) (NRS & SRS): Total Vol Solids (NRS & SRS): Total C-2 (wasting) cake flow gal: C-1 (digested) Solids (mg/L) cake: C-1 Vol solids cake (mg/L): C-2 solids cake (mg/L): C-2 Vol Solids cake (mg/L) Cake flow from Rotary Drum Thicker to digester.

CERTIFICATION STATEMENT

I certify under the penalty of law, that the pathogen requirements in Part I.C.2, one of the vector attraction reduction alternatives in Part I.C.3, the management practices in part I.D (if necessary) (including practices in Part I.D.13 if the table 4 annual pollutant limits are used) and the site restrictions in part I.C.2 (if necessary) have been met. This determination has been made under my direction and supervision in accordance with information used to determine that the pathogen requirements, the vector attraction reduction requirements, the management practices and the site restrictions have been met. I am aware that there are significant penalties for false certification including the possibility imprisonment.

Signature

Jim Hughes, Manager

Water Reclamation Division

Attachment: #6.

Dry Creek Water Reclamation Facility

H. Best management practices are accomplished by applying biosolids at a whole sludge application rate that is less than or equal to the agronomic rate for the specific site and plant species. The Biosolids are applied so that it does not adversely affect a threatened or endangered species.

Biosolids are not dispersed on sites that are flooded or snow covered, frozen ground with a slope of three percent or more to prevent run off into wetland or surface water. A buffer zone of thirty-five feet from waterways, stock wells, and surface water is observed. Biosolids land applications are prohibited to sites where the available phosphorous content of the existing soil exceeds 400 pounds per acre.

Stored Biosolids on the plant facility remain in windrows for two years or less. The Biosolids are land applied in the winter, spring and fall of the year, weather permitting. Biosolids and soil are analytically tested before disposal. Cheyenne's sludge management practice ensures compliance with both Federal and State parameters and provides for long term Biosolids procedures with little or no detriment to the environment, while enhancing the native grass and field crop production of those participating ranchers and farmers who utilize Biosolids as a fertilizer supplement and soil conditioner.

CERTIFICATION STATEMENT

I certify under the penalty of law that the pathogen requirements in Part I.C.2, one of the vector attraction in Part I.C.3, reduction alternatives the management practices in part I.D (if necessary) (including in the practices in Part I.D.13 if the table 4 annual pollutant limits are used) and the site restrictions in Part I.C.2 (if necessary) have been met. This determination has been made under my direction and supervision in accordance with the system designed to assure that qualified personal properly gather and evaluate the information used to determine that the pathogen requirements, the management practices and the site restrictions have been met. I am aware that there are significant penalties for false certification including the possibility of imprisonment.

Signature

Jim Hughes, Manager

Water Reclamation Division

Attachment: #7.

Dry Creek Water Reclamation Facility

I. Site restrictions are first achieved through the quality of sewage sludge product which has been stabilized to reduce pathogenic organisms, which has been dried to a solids concentration of sixty percentile or greater and contains no hazardous or toxic compounds or chemicals in concentrations which exceed those authorized by the USA EPA REGION VIII and WYOMING DEQ for land application in Part C.1, Specific Limitations and Self Monitoring Requirements and Chemical Pollutant Limitations.

The dry sludge that is produced is class A and B which are applied primarily to range land. Before applying sewage sludge on rangeland, pastureland, farm land, or fields, soil samples have been collected and have had the appropriate soil analysis conducted.

The <u>Class B</u> Sludge with respect to pathogens has been in compliance with the entire site restrictions listed in Part I.C.2. No sludge or material derived from sludge exceeds the limits in Table 3 Part I.C.1. The <u>Class A</u> pathogen reduction limits in Part I.C.2 meets the first 4 vector attraction reduction alternatives in Part I.C.3. There are sufficient management practices used to prevent malfunctions and deterioration, operator errors and discharges which may cause or lead to the release of sludge to the environment, a threat to human health or a nuisance.

CERTIFICATION STATEMENT

I certify under the penalty of law, that the pathogen requirements in Part I.C.2, one of the vector attraction reduction alternatives in Part I.C.3, the management practices in Part I.D (if necessary) including the practice in Part I.D.13 if the table 4 annual pollutant limits are used) and the site restrictions in Part I.C.2 (if necessary) have been met. This determination has been made under my direction and supervision in accordance with the system designed to assure that qualified personnel properly gather and evaluate the information used to determine that the pathogen requirements, the vector attractions reduction requirements, the management practices and the restrictions have been met. I am aware that there are significant penalties for false certification including the possibility of imprisonment.

Signature /

Jim Hughes, Manager



ANALYTICAL RESULTS

DRY CREEK WWTP LABORATORY

Cheyenne BOPU 8911 Campstool Road Cheyenne, Wyoming 82007 Phone: 307-635-3163 Fax: 307-635-6833

Date Sampled: 09/25/13

Date Received: 09/25/13

Sample Location: Zone E

Sample Matrix: Compost

Sampled By: CB

Date Reported: 10/15/13

Date Fecal Analyzed: NA

Date Solids Analyzed: 10/02/13

Analyst(s): mw

EPA Method/Total Solids:

SM 19th Ed 2540B

EPA Method/Volatile Solids: SM 19th Ed 2540E

EPA Method/Fecal Coliform: SM 18th Ed 9221E (A-1 Media)

Row #	Total Solids %	Volatile Solids%	Fecal Coliform/ Dry Gram Sludge			
1	68.4	32.3	NA -			
2	72.9	32.4	NA			
3	73.3	33.6	NA			
4	63.4	33.0	NA			
5	62.8	30.8	NA			
6	66.1	33.2	NA			
7	59.3	30.7	NA			
8	55.4	29.9	NA			
9	66.8	36.4	NA			

Comments:

All data rheets QA/QC requirements; please see QA/QC files in Dry Creek Laboratory.

NA/= Not Analyzed

Kent/Loader, Laboratory Supervisor

Dry Creek WRF Laboratory For: TS & VS

Identification Reporting: No. WYSL - 22934

Permit No. WYG - <u>650002</u>

(Cheyenne BOPU) Dry Creek Water Reclamation Facility

Samples and Analytical

Quality Assurance/Quality Control OA/QC

Date: 9-25-13 | Time: 11:30 | [] AM [] PM

Analytical Sampling Records (Cheyenne BOPU) Dry Creek WRF Laboratory

[] Dates and time of samples collected
[] Sampling location documented
[] Sampling types appropriate
[] Sampling volumes recorded
[] Name of person sampling
[] Types of sampling containers
[] Methods of preservation
[] Sampling quality assurance/ quality control QA/QC available
[] Pollutant limits red flagged if over mg/kg (Table 1,2,3,4 and Section 503.13) (Class A and B Biosolids)
[] Certification statement signed with each laboratory analytical report:
1. Pathogen reduction
2. Vector attraction reduction operates at Dry Creek WRF analysis samples. Results from daily sheets and results, recorded daily.
3. Management Practices
4. Site restrictions
[] Class A sludge: average temperature, (volatile solids percent) and total solids Dry sludge) once a month. Turn rows once a month, <u>weather permitting</u> .
[] Chain of custody recorded
Date: 9-25-13 Time: 11/30 [](AM [] PM

Analytical Records From: (Cheyenne BOPU) Dry Creek WRF To: (Cheyenne BOPU) Dry Creek WRF Laboratory

[] Date and time of samples analysis

[] Name of analyst

[] All analyses are reported on dry weight basis

[] Dry Creek WRF Laboratory
8911 Campstool Rd.
Cheyenne, WY 82007
Ph: 307-635-3163
Fax: 307-635-6833

[] Analytical quality assurance/quality control (QA/QC) available

[] Analytical results available

[] Chain of custody record

Date: 9-2.5-1.3 | Time: 11:30 | [] AM/] PM

Analytical Records From: (Cheyenne BOPU) Dry Creek WRF To: (Cheyenne BOPU) Dry Creek WRF Laboratory

[] Date and time of sample
[] Name of analyst
[] Analytical methods used
[] Analyses and calculation results properly documented or verified
[] All analysis are reported on dry weight basis with the exception of volatile solids or total solids in percent. (1quart plastic bag 450 grams) (7 quart plastic bags 3150 grams).
[] Volatile solids and total solids samples need to be analyzed six times a year for Class B Biosolids and 12 times a year for Class A Biosolids.
[] Analytical quality assurance/quality control (QA/QC) available
[] Analytical results available
[] Chain of custody record

Zone: [] Rows: 1 - 7 Date: 9-25-13 Time: 1/130 [] XM [] PM

Analytical Sample Containers From: (Cheyenne BOPU) Dry Creek WRF To: (Cheyenne BOPU) Dry Creek WRF Laboratory

Dry Sludge for fecal results in MPN, and percent solids for Class A or Class B Biosolids. 1 quart Plastic bags 450 grams: 7 Quart Plastic bags total of 3150 grams. Fecal samples and results are analyzed at the Dry Creek WRF Laboratory in with six hours of the holding time. The results of fecal samples in (MPN) and (percent solids) need to be analyzed in, *February, April, June, August, October, and December. **January, March, May, July, September and November; test for TS and VS. Class A test for Helminth ova density limits > 1 egg/4g TS; Enteric virus density limits of > 1 PFU/4g

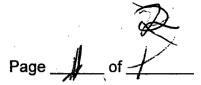
- 1. *' **Class A sludge < 1000 MPN/gram. (Test 12 times a year for TS and VS).
- 2. * Class B sludge < 2,000,000 MPN/gram
- 3. Percent solids, 75 % or better for Class A Biosolids and Class B Biosolids.
- 4. Chain of custody record

Zone: F Rows: 1 - 7 Date: 1/30 Time: 1/30 [] AM [] PM

Project Name: 15/050/165								
Location: Dry Creek LURF.								
Address: 8911 Campstool Rd.								
City: Cheyenne State: 4 Zip Code: 82007.								
City: Cheyenne State: Ly Zip Code: 82007. Samples Collected by: Chet Bank M[Date/Time: 9-25-13/1/30pm]								
Analytical Certification								
This certification must be completed by the Analytical Laboratory performing service for the Cheyenne Board of Public Utilities and submitted with each "Analytical Report.								
"I certify that these analysis and resulting report (s) were prepared under my direction and supervision in accordance with a system designed to assure that qualified personal properly analyze all samples and accurately report the results. I certify that all analysis were performed in accordance with method approved for wastewater under the latest revision to 40 CFR Part 503 Sludge Regulation. Based on my inquiry of the person or persons who manage the system, or those person directly responsible for analyzing, the wastewater samples and generating the report (s), the analysis, report, and information submitted is to the best on my knowledge and belief, true, accurate, and completed."								
Name of Laboratory: Dry Creek WRF. Address: 8911 Camps Foot Rd.								
Address: 8911 Camps Tool Rd.								
City: Cheyenne State: Wy Zip Code: 82007.								
Name of Analyst: Lond.								
This Certification is signed by:								
- -								
Date: 10-79-1] Time: 8] [AM [] PM								



Chain of Custody and Analytical Request Record
PLEASE PRINT CLEARLY, provide as much information as possible



Client's Name: <u> </u>									
Report Required Fo	or:// _{):(0*///}	(L ₂	Number of	ANALYSI	S REQUESTED	How Preserved	Sample Type	Other Information	Analysis Completed
2011 E	N.Wo	1.7	Containers Sample Type A W S V B O Air Water Soils/Solids Yegetation			HNO3 H2SO4 4°C HCL	Grab or Composite	(pH, Field Analysis, etc.)	Yes / No (Lab use only)
SAMPLE IDEN		Collection Collection Date Time	<u>B</u> ioassay <u>Q</u> ther MATRIX	23		None			
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3	5								
4									a property of the second
5	67			Office and a second					٠
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Custody Record MUST be	Relinquished by:	A Mandrey	Date/Time:	7-25-1 301411	Received by:	(2 a/			Date/Time:
Signed	Sample Disposal:	Return to client:	\	_ Lab dispo		· · · · · · · · · · · · · · · · · · ·	3	Log#	750

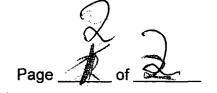
Copies to:

White - Book in Laboratory

Yellow - Laboratory Hard Copy

Pink - Client





Chain of Custody and Analytical Request Record PLEASE PRINT CLEARLY, provide as much information as possible

Client's Name: <u>∬, y C, rept to</u> RF Contact Name: <u>/ / A // // Sampler's Name (if other than Contact):</u>												
Report Required For: Billsolide 2012 E Rows 8-9			Number of Containers Sample Type A W S V B C <u>A</u> ir <u>W</u> ater <u>S</u> oils/ <u>S</u> olids	ANAL	SIS R	REQUE	JESTEI	ED H	How Sampl Preserved Type	Sample Type Grab or		Analysis <u>Completed</u> Yes / No (Lab use only)
SAMPLE IDEN (Name, Loca		Date Tir		23	,				HCL None	Composite		
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Signed	Sample Disposal:	Return to client	•	Lab c	lisposa	·					Log#	751

Copies to:

White - Book in Laboratory

Yellow - Laboratory Hard Copy

Pink - Client

Attachment: #4. Dry Creek Water Reclamation Facility

F. Pathogen reduction is accomplished through anaerobic digestion. The primary and secondary digested sludge is treated in the absence of air for mean cell residence time and temperature between 25 and 35 days at 92 to 100 degrees Fahrenheit. Air dried sludge is obtained with a tractor aerator on paved drying beds and on site unpaved storage area in windrows that are turned approximately once a month dependant on the weather conditions.

The Biosolids production (dry weight) at the Dry Creek WRF is over 1500 metric tons a year. Therefore samples are collected six times a year (February, April, May, June, August, October, and December). The laboratories analyze the dry samples for metals, nutrients, organics pathogens, volatile solids and total solids.

CERTIFICATION STATEMENT

I certify under the penalty of law, that the pathogen requirements in Part I.C.3, the management practices in Part I.D (if necessary) (including the practice in part I.D.13 if the table 4 annual pollutant limits are used) and the site restrictions in Part I.C.2 (if necessary) have been met. This determination has been made under my direction and supervision in accordance with the system designed to assure that qualified personnel properly gather and evaluate the information used to determine that pathogen requirements, the vector attraction reduction requirements, the management practices and the site restrictions have been met. I am aware that there are significant penalties for false certification including the possibility of imprisonment.

Signature

Jim Hughes, Manager

Water Reclamation Division

Attachment: #5. Dry Creek Water Reclamation Facility

G. Vector attraction reduction requirements are met through anaerobic digestion when there is thirty eight percent or more reduction in volatile solids. Volatile solids destruction is measured weight by volume average ((Vol. Solids Reduction = VS in - VS out / (VS in - (VS in * VS out)) (Use Average). The sludge is also air dried in windrows for further vector attraction reduction. The dry solids in windrows are between 65% to 80% total volatile solids reduction before land application.

RE: Flows From: Primary North and Primary South Raw sludge Average: Total solids (change % to Mg/l (10000) (NRS & SRS): Total Vol Solids (NRS & SRS): Total C-2 (wasting) cake flow gal: C-1 (digested) Solids (mg/L) cake: C-1 Vol solids cake (mg/L): C-2 solids cake (mg/L): C-2 Vol Solids cake (mg/L) Cake flow from Rotary Drum Thicker to digester.

CERTIFICATION STATEMENT

I certify under the penalty of law, that the pathogen requirements in Part I.C.2, one of the vector attraction reduction alternatives in Part I.C.3, the necessary) practices in part I.D (if (including practices in Part I.D.13 if the table 4 annual pollutant limits are used) and the site restrictions in part I.C.2 (if necessary) have been met. This determination has been made under my direction and supervision in accordance with determine information used to that the requirements, the vector attraction reduction requirements, the management practices and the site restrictions have been met. I am aware that there are significant penalties for including the false certification possibility imprisonment.

Signature

Jim Hughes, Manager

Water Reclamation Division

Attachment: #6. Dry Creek Water Reclamation Facility

H. Best management practices are accomplished by applying biosolids at a whole sludge application rate that is less than or equal to the agronomic rate for the specific site and plant species. The Biosolids are applied so that it does not adversely affect a threatened or endangered species.

Biosolids are not dispersed on sites that are flooded or snow covered, frozen ground with a slope of three percent or more to prevent run off into wetland or surface water. A buffer zone of thirty-five feet from waterways, stock wells, and surface water is observed. Biosolids land applications are prohibited to sites where the available phosphorous content of the existing soil exceeds 400 pounds per acre.

Stored Biosolids on the plant facility remain in windrows for two years or less. The Biosolids are land applied in the winter, spring and fall of the year, weather permitting. Biosolids and soil are analytically tested before disposal. Cheyenne's sludge management practice ensures compliance with both Federal and State parameters and provides for long term Biosolids procedures with little or no detriment to the environment, while enhancing the native grass and field crop production of those participating ranchers and farmers who utilize Biosolids as a fertilizer supplement and soil conditioner.

CERTIFICATION STATEMENT

I certify under the penalty of law that the pathogen requirements in Part I.C.2, one of the vector attraction reduction alternatives in Part I.C.3, the management practices in part I.D (if necessary) (including in the practices in Part I.D.13 if the table 4 annual pollutant limits are used) and the site restrictions in Part I.C.2 (if necessary) have been met. This determination has been made under my direction and supervision in accordance with the system designed to assure that qualified personal properly gather and evaluate the information used to determine that the pathogen requirements, the management practices and the site restrictions have been met. I am aware that there are significant penalties for false certification including the possibility of imprisonment.

Signature

Jim Hughes, Manager

Water Reclamation Division Attachment: #7.

Dry Creek Water Reclamation Facility

I. Site restrictions are first achieved through the quality of sewage sludge product which has been stabilized to reduce pathogenic organisms, which has been dried to a solids concentration of sixty percentile or greater and contains no hazardous or toxic compounds or chemicals in concentrations which exceed those authorized by the USA EPA REGION VIII and WYOMING DEQ for land application in Part C.1, Specific Limitations and Self Monitoring Requirements and Chemical Pollutant Limitations.

The dry sludge that is produced is class A and B which are applied primarily to range land. Before applying sewage sludge on rangeland, pastureland, farm land, or fields, soil samples have been collected and have had the appropriate soil analysis conducted.

The <u>Class B</u> Sludge with respect to pathogens has been in compliance with the entire site restrictions listed in Part I.C.2. No sludge or material derived from sludge exceeds the limits in Table 3 Part I.C.1. The <u>Class A</u> pathogen reduction limits in Part I.C.2 meets the first 4 vector attraction reduction alternatives in Part I.C.3. There are sufficient management practices used to prevent malfunctions and deterioration, operator errors and discharges which may cause or lead to the release of sludge to the environment, a threat to human health or a nuisance.

CERTIFICATION STATEMENT

I certify under the penalty of law, that the pathogen requirements in Part I.C.2, one of the vector attraction reduction alternatives in Part I.C.3, the management practices in Part I.D (if necessary) including the practice in Part I.D.13 if the table 4 annual pollutant limits are used) and the site restrictions in Part I.C.2 (if necessary) have been met. This determination has been made under my direction and supervision in accordance with the system designed to assure that qualified personnel properly gather and evaluate the information used to determine that the pathogen requirements, the vector attractions reduction requirements, the management practices and the restrictions have been met. I am aware that there are significant penalties for false certification including the possibility of imprisonment.

Signature / Jim Hughes, Manager



ANALYTICAL RESULTS

DRY CREEK WWTP LABORATORY

Cheyenne BOPU 8911 Campstool Road Cheyenne, Wyoming 82007 Phone: 307-635-3163

Fax: 307-635-6833

Date Sampled: 09/25/13

Date Received: 09/25/13

Sample Location: Zone D

Sample Matrix: Compost

Sampled By: CB

Date Reported: 10/29/13

Date Fecal Analyzed: NA

Date Solids Analyzed: 10/02/13

Fecal Coliform/

Analyst(s): mw

EPA Method/Total Solids:

SM 19th Ed 2540B

EPA Method/Volatile Solids: SM 19th Ed 2540E

EPA Method/Fecal Coliform: SM 18th Ed 9221E (A-1 Media)

Row #	Total Solids %	Volatile Solids%	Dry Gram Sludge			
1	59.0	40.5	NA			
2	97.3	57.0	NA.			
3	67.0	37.8	NA			
4	56.1	39.6	NA ⁻			
5	67.8	35.3	NA			

Comments:

All data meets QA/QC requirements; please see QA/QC files in Dry Creek Laboratory. NA = Not Analyzed

Kent Loader, Laboratory Supervisor

10,29,13 Date:

<u>Dry Creek WRF Laboratory</u> <u>For: TS & VS</u>

Identification Reporting: No. WYSL - 22934

Permit No. WYG - 650002

(Cheyenne BOPU) Dry Creek Water Reclamation Facility

Samples and Analytical

Quality Assurance/Quality Control OA/QC

Date: 9-25 | 3 | Time: 1/30 | [] ΔM /[] PM

Analytical Sampling Records (Cheyenne BOPU) Dry Creek WRF Laboratory

[] Dates and time of samples collected
[] Sampling location documented
[] Sampling types appropriate
[] Sampling volumes recorded
[] Name of person sampling
[] Types of sampling containers
[] Methods of preservation
[] Sampling quality assurance/ quality control QA/QC available
[] Pollutant limits red flagged if over mg/kg (Table 1,2,3,4 and Section 503.13) (Class A and B Biosolids)
[] Certification statement signed with each laboratory analytical report:
1. Pathogen reduction
2. Vector attraction reduction operates at Dry Creek WRF analysis samples. Results from daily sheets and results, recorded daily.
3. Management Practices
4. Site restrictions
[] Class A sludge: average temperature, (volatile solids percent) and total solids Dry sludge) once a month. Turn rows once a month, <u>weather permitting</u> .
[] Chain of custody recorded
Date: 9-25- 13 Time: // (30) [] AM/[] PM

Analytical Records From: (Cheyenne BOPU) Dry Creek WRF To: (Cheyenne BOPU) Dry Creek WRF Laboratory

[] Date and time of samples analysis	
[] Name of analyst	
[] All analyses are reported on dry weight basis	
[] Dry Creek WRF Laboratory 8911 Campstool Rd. Cheyenne, WY 82007 Ph: 307-635-3163 Fax: 307-635-6833	
[] Analytical quality assurance/quality control (QA/QC) available	
[] Analytical results available	
[] Chain of custody record	

Date: 9-25-13 | Time: ///3() | [[AM]] PM

Analytical Records From: (Cheyenne BOPU) Dry Creek WRF To: (Cheyenne BOPU) Dry Creek WRF Laboratory

[] D	Date and time of sample
[] N	Same of analyst
[] A	analytical methods used
[] A	analyses and calculation results properly documented or verified
0	all analysis are reported on dry weight basis with the exception of volatile solids or total solids in percent. (1quart plastic bag 450 grams) (7 quart plastic bags 150 grams).
	Volatile solids and total solids samples need to be analyzed six times a year for Class B Biosolids and 12 times a year for Class A Biosolids.
[] A	analytical quality assurance/quality control (QA/QC) available
[] A	analytical results available
[] C	Chain of custody record

Zone: \bigcirc Rows: \bigcirc - \bigcirc Date: \bigcirc -25-13 Time: \bigcirc [] AM [] PM

Analytical Sample Containers From: (Cheyenne BOPU) Dry Creek WRF To: (Cheyenne BOPU) Dry Creek WRF Laboratory

Dry Sludge for fecal results in MPN, and percent solids for Class A or Class B Biosolids. 1 quart Plastic bags 450 grams: 7 Quart Plastic bags total of 3150 grams. Fecal samples and results are analyzed at the Dry Creek WRF Laboratory in with six hours of the holding time. The results of fecal samples in (MPN) and (percent solids) need to be analyzed in, *February, April, June, August, October, and December. **January, March, May, July, September and November; test for TS and VS. Class A test for Helminth ova density limits > 1 egg/4g TS; Enteric virus density limits of > 1 PFU/4g

- 1. *' **Class A sludge < 1000 MPN/gram. (Test 12 times a year for TS and VS).
- 2. * Class B sludge < 2,000,000 MPN/gram
- 3. Percent solids, 75 % or better for Class A Biosolids and Class B Biosolids.
- 4. Chain of custody record

Zone: [] Rows: [] - [] Date: [] Time: [] Time: [] PM

Project Name: BiOSO 11d 5
Location: Dry Creek WRF.
Address: 89/1 Canpstool Rd
City: Chey Einne State: [1.4] Zip Code: 82007.
City: Chey Enne State: [1 y] Zip Code: 82007. Samples Collected by: Chot Back [Date/Time: 9-25-13 /11:30 Am)
Analytical Certification
This certification must be completed by the Analytical Laboratory performing service for the Cheyenne Board of Public Utilities and submitted with each "Analytical Report.
"I certify that these analysis and resulting report (s) were prepared under my direction and supervision in accordance with a system designed to assure that qualified personal properly analyze all samples and accurately report the results. I certify that all analysis were performed in accordance with method approved for wastewater under the latest revision to 40 CFR Part 503 Sludge Regulation. Based on my inquiry of the person or persons who manage the system, or those person directly responsible for analyzing, the wastewater samples and generating the report (s), the analysis, report, and information submitted is to the best on my knowledge and belief, true, accurate, and completed."
Name of Laboratory: Dry CVECK URF.
Address: 89// Campstou/Rd.
City: Cheyenne State: Loy Zip Code: 82007.
Name of Analyst: Kent Joach.
This Certification is signed by:
Date: /6-31-13 Time: 9 AM [] PM

Cheyenne Board of Public Utilities Water Reclamation Laboratory

Chain of Custody and Analytical Request Record
PLEASE PRINT CLEARLY, provide as much information as possible

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Page		of	

Client's Name: Dr. V. C. 19815 WWF Contact Name: A of Baybull Sampler's Name (if other than Contact):														
Report Required F	or: 1,0001	116		Number of Containers	AN/	ALY: 	SIS	REQ 	UES'	1	How Preserved	Sample <u>Type</u>	Other Information	Analysis <u>Completed</u>
76118 D- Rows 1-5			Sample Type A W S V B O Air <u>W</u> ater <u>S</u> oils/ <u>S</u> olids <u>V</u> egetation <u>B</u> ioassay							HNO3 H2SO4 4°C HCL None	Grab or Composite	(pH, Field Analysis, etc.)	Yes / No (Lab use only)	
SAMPLE IDEN (Name, Loca		Collection Date	Collection Time	<u>O</u> ther MATRIX		2					١,٠ ١,١			
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4	1 4			7) descriptions of the con-								
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7			1							\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	\.			
Custody Record MUST be	Relinquished by:	of Para	Just .	Date/Time: -/y->-/s/-/36	-13 214	11		Recei	ved by	ر: إير أ				Date/Time:
Signed	Sample Disposal:	Return to	client:		La	ıb dis	sposa	d:					Log#	719

Copies to:

White - Book in Laboratory

Yellow - Laboratory Hard Copy

Pink - Client

Attachment: #4. Dry Creek Water Reclamation Facility

F. Pathogen reduction is accomplished through anaerobic digestion. The primary and secondary digested sludge is treated in the absence of air for mean cell residence time and temperature between 25 and 35 days at 92 to 100 degrees Fahrenheit. Air dried sludge is obtained with a tractor aerator on paved drying beds and on site unpaved storage area in windrows that are turned approximately once a month dependant on the weather conditions.

The Biosolids production (dry weight) at the Dry Creek WRF is over 1500 metric tons a year. Therefore samples are collected six times a year (February, April, May, June, August, October, and December). The laboratories analyze the dry samples for metals, nutrients, organics pathogens, volatile solids and total solids.

CERTIFICATION STATEMENT

I certify under the penalty of law, that the pathogen requirements in Part I.C.3, the management practices in Part I.D (if necessary) (including the practice in part I.D.13 if the table 4 annual pollutant limits are used) and the site restrictions in Part I.C.2 (if necessary) have been met. This determination has been made under my direction and supervision in accordance with the system designed to assure that qualified personnel properly gather and evaluate the information used to determine that pathogen requirements, the vector attraction reduction requirements, the management practices and the site restrictions have been met. I am aware that there are significant penalties for false certification including the possibility of imprisonment.

Signature

Jim Wughes, Manager

Water Reclamation Division

Attachment: #5.

Dry Creek Water Reclamation Facility

G. Vector attraction reduction requirements are met through anaerobic digestion when there is thirty eight percent or more reduction in volatile solids. Volatile solids destruction is measured weight by volume average ((Vol. Solids Reduction = VS in - VS out / (VS in -((VS in * VS out)) (Use Average). The sludge is also air dried in windrows for further vector attraction reduction. The dry solids in windrows are between 65% to 80% total volatile solids reduction before land application.

RE: Flows From: Primary North and Primary South Raw sludge Average: Total solids (change % to Mg/l (10000) (NRS & SRS): Total Vol Solids (NRS & SRS): Total C-2 (wasting) cake flow gal: C-1 (digested) Solids (mg/L) cake: C-1 Vol solids cake (mg/L): C-2 solids cake (mg/L): C-2 Vol Solids cake (mg/L) Cake flow from Rotary Drum Thicker to digester.

CERTIFICATION STATEMENT

I certify under the penalty of law, that the pathogen requirements in Part I.C.2, one of the vector attraction alternatives in Part I.C.3, the management practices in part I.D (if necessary) (including the practices in Part I.D.13 if the table 4 annual pollutant limits are used) and the site restrictions in part I.C.2 (if necessary) have been met. This determination has been made under my direction and supervision in accordance with information used to determine that the requirements, the vector attraction reduction requirements, the management practices and the site restrictions have been met. I am aware that there are significant penalties for certification including the possibility imprisonment.

Signature

Jim Hughes, Manager

Water Reclamation Division

Attachment: #6. Dry Creek Water Reclamation Facility

H. Best management practices are accomplished by applying biosolids at a whole sludge application rate that is less than or equal to the agronomic rate for the specific site and plant species. The Biosolids are applied so that it does not adversely affect a threatened or endangered species.

Biosolids are not dispersed on sites that are flooded or snow covered, frozen ground with a slope of three percent or more to prevent run off into wetland or surface water. A buffer zone of thirty-five feet from waterways, stock wells, and surface water is observed. Biosolids land applications are prohibited to sites where the available phosphorous content of the existing soil exceeds 400 pounds per acre.

Stored Biosolids on the plant facility remain in windrows for two years or less. The Biosolids are land applied in the winter, spring and fall of the year, weather permitting. Biosolids and soil are analytically tested before disposal. Cheyenne's sludge management practice ensures compliance with both Federal and State parameters and provides for long term Biosolids procedures with little or no detriment to the environment, while enhancing the native grass and field crop production of those participating ranchers and farmers who utilize Biosolids as a fertilizer supplement and soil conditioner.

CERTIFICATION STATEMENT

I certify under the penalty of law that the pathogen requirements in Part I.C.2, one of the vector attraction reduction alternatives in Part I.C.3, the management practices in part I.D (if necessary) (including in the practices in Part I.D.13 if the table 4 annual pollutant limits are used) and the site restrictions in Part I.C.2 (if necessary) have been met. This determination has been made under my direction and supervision in accordance with the system designed to assure that qualified personal properly gather and evaluate the information used to determine that the pathogen requirements, the management practices and the site restrictions have been met. I am aware that there are significant penalties for false certification including the possibility of imprisonment.

Signature

Jim Hughes, Manager

Water Reclamation Division Attachment: #7.

Dry Creek Water Reclamation Facility

I. Site restrictions are first achieved through the quality of sewage sludge product which has been stabilized to reduce pathogenic organisms, which has been dried to a solids concentration of sixty percentile or greater and contains no hazardous or toxic compounds or chemicals in concentrations which exceed those authorized by the USA EPA REGION VIII and WYOMING DEQ for land application in Part C.1, Specific Limitations and Self Monitoring Requirements and Chemical Pollutant Limitations.

The dry sludge that is produced is class \underline{A} and \underline{B} which are applied primarily to range land. Before applying sewage sludge on rangeland, pastureland, farm land, or fields, soil samples have been collected and have had the appropriate soil analysis conducted.

The <u>Class B</u> Sludge with respect to pathogens has been in compliance with the entire site restrictions listed in Part I.C.2. No sludge or material derived from sludge exceeds the limits in Table 3 Part I.C.1. The <u>Class A</u> pathogen reduction limits in Part I.C.2 meets the first 4 vector attraction reduction alternatives in Part I.C.3. There are sufficient management practices used to prevent malfunctions and deterioration, operator errors and discharges which may cause or lead to the release of sludge to the environment, a threat to human health or a nuisance.

CERTIFICATION STATEMENT

I certify under the penalty of law, that the pathogen requirements in Part I.C.2, one of the vector attraction reduction alternatives in Part I.C.3, the management practices in Part I.D (if necessary) including the practice in Part I.D.13 if the table 4 annual pollutant limits are used) and the site restrictions in Part I.C.2 (if necessary) have been met. This determination has been made under my direction and supervision in accordance with the system designed to assure that qualified personnel properly gather and evaluate the information used to determine that the pathogen requirements, the vector attractions reduction requirements, the management practices and the restrictions have been met. I am aware that there are significant penalties for false certification including the possibility of imprisonment.

Signature /

Signature ()
Jim()Hughes, Manager



ANALYTICAL RESULTS

DRY CREEK WWTP LABORATORY

Cheyenne BOPU 8911 Campstool Road Cheyenne, Wyoming 82007 Phone: 307-635-3163

Fax: 307-635-6833

Date Sampled: 09/25/13

Date Received: 09/25/13 Sample Location: Zone C

Sample Matrix: Compost

Sampled By: CB

Date Reported: 10/15/13 Date Fecal Analyzed: NA

Date Solids Analyzed: 10/02/13

Analyst(s): mw

EPA Method/Total Solids:

SM 19th Ed 2540B

EPA Method/Volatile Solids: SM 19th Ed 2540E

EPA Method/Fecal Coliform: SM 18th Ed 9221E (A-1 Media)

Row#	Total Solids %	Volatile Solids%	Fecal Coliform/ Dry Gram Sludge			
1	68.5	33.5	NA .			
2	82.7	27.1	NA			
3	71.9	29.7	NA			
4	64.9	33.7	NA			
5	67.9	35.0	NA			
6	59.4	37.6	NA			
7	57.0	41.4	NA			

Comments:

All data meets QA/QC requirements; please see QA/QC files in Dry Creek Laboratory. NA = Not Analyzed

Kent Loader, Laboratory Supervisor

Date:

Page 1 of 1

Dry Creek WRF Laboratory For: TS & VS

Identification Reporting: No. WYSL - 22934

Permit No. WYG - <u>650002</u>

(Cheyenne BOPU) Dry Creek Water Reclamation Facility

Samples and Analytical

Quality Assurance/Quality Control OA/QC

Date: 9-2.5-13 Time: 1/(3) [] AM [] PM

Analytical Sampling Records (Cheyenne BOPU) Dry Creek WRF Laboratory

[] Dates and time of samples collected
[] Sampling location documented
[] Sampling types appropriate
[] Sampling volumes recorded
[] Name of person sampling
[] Types of sampling containers
[] Methods of preservation
[] Sampling quality assurance/ quality control QA/QC available
[] Pollutant limits red flagged if over mg/kg (Table 1,2,3,4 and Section 503.13) (Class A and B Biosolids)
[] Certification statement signed with each laboratory analytical report:
1. Pathogen reduction
2. Vector attraction reduction operates at Dry Creek WRF analysis samples. Results from daily sheets and results, recorded daily.
3. Management Practices
4. Site restrictions
[] Class A sludge: average temperature, (volatile solids percent) and total solids Dry sludge) once a month. Turn rows once a month, <u>weather permitting</u> .
[] Chain of custody recorded
Date: $9 - 25 - 13$ Time: $1/130$ [] AM, [] PM

Analytical Records From: (Cheyenne BOPU) Dry Creek WRF To: (Cheyenne BOPU) Dry Creek WRF Laboratory

Date and time of samples analysis
Name of analyst
All analyses are reported on dry weight basis
Dry Creek WRF Laboratory 8911 Campstool Rd. Cheyenne, WY 82007 Ph: 307-635-3163 Fax: 307-635-6833
Analytical quality assurance/quality control (QA/QC) available
Analytical results available
Chain of custody record

Analytical Records From: (Cheyenne BOPU) Dry Creek WRF To: (Cheyenne BOPU) Dry Creek WRF Laboratory

[] Date and time of sample
[] Name of analyst
[] Analytical methods used
[] Analyses and calculation results properly documented or verified
[] All analysis are reported on dry weight basis with the exception of volatile solids or total solids in percent. (1quart plastic bag 450 grams) (7 quart plastic bags 3150 grams).
[] Volatile solids and total solids samples need to be analyzed six times a year for Class B Biosolids and 12 times a year for Class A Biosolids.
[] Analytical quality assurance/quality control (QA/QC) available
[] Analytical results available
[] Chain of custody record

Zone: [] Rows: _______ - ______ Date: 9-25-73 Time: _______ Time: _______ [] [] [] [] PM

Analytical Sample Containers From: (Cheyenne BOPU) Dry Creek WRF To: (Cheyenne BOPU) Dry Creek WRF Laboratory

Dry Sludge for fecal results in MPN, and percent solids for Class A or Class B Biosolids. 1 quart Plastic bags 450 grams: 7 Quart Plastic bags total of 3150 grams. Fecal samples and results are analyzed at the Dry Creek WRF Laboratory in with six hours of the holding time. The results of fecal samples in (MPN) and (percent solids) need to be analyzed in, *February, April, June, August, October, and December. **January, March, May, July, September and November; test for TS and VS. Class A test for Helminth ova density limits > 1 egg/4g TS; Enteric virus density limits of > 1 PFU/4g

- 1. *' **Class A sludge < 1000 MPN/gram. (Test 12 times a year for TS and VS).
- 2. * Class B sludge < 2,000,000 MPN/gram
- 3. Percent solids, 75 % or better for Class A Biosolids and Class B Biosolids.
- 4. Chain of custody record

Zone: C | Rows: 1 - 2 | Date: 9 - 2573 | Time: 1130 | PM

Project Name: 6,050 1,d 5
Location: Dry Creek WRF
Address: 8911 Camps Tool Rd.
City: Cheyenve State: Wy Zip Code: \$2007.
Samples Collected by: Chet Bunker .[Date/Time: 9-25-13/11;30 Am
Analytical Certification
This certification must be completed by the Analytical Laboratory performing service for the Cheyenne Board of Public Utilities and submitted with each "Analytical Report.
"I certify that these analysis and resulting report (s) were prepared under my direction and supervision in accordance with a system designed to assure that qualified personal properly analyze all samples and accurately report the results. I certify that all analysis were performed in accordance with method approved for wastewater under the latest revision to 40 CFR Part 503 Sludge Regulation. Based on my inquiry of the person or persons who manage the system, or those person directly responsible for analyzing, the wastewater samples and generating the report (s), the analysis, report, and information submitted is to the best on my knowledge and belief, true, accurate, and completed."
Name of Laboratory: Dry Creek war.
Address: 891/ Camp 5/00/ Ad
City: Cheyenna State: (1/4 Zip Coder 2) (1).
Name of Analyst: Lout Joch.
This Certification is signed by:
Date: 170.29-(?] Time: 3 AM [] PM

Cheyenne Board of Public Utilities Water Reclamation Laboratory

Chain of Custody and Analytical Request Record
PLEASE PRINT CLEARLY, provide as much information as possible

Page of

Client's Name: Day C, ROK L	AH Contact Name:_			ame (if other than Contact):_	
Report Required For:	19	Number of ANALYSIS Containers	REQUESTED How Preserved	Sample Other Type Information	Analysis Completed
2012 (- Row 1-		Sample Type A W S V B O Air <u>W</u> ater <u>S</u> oils/ <u>S</u> olids <u>Y</u> egetation <u>B</u> ioassay	HNO ₃ H ₂ SO ₄	Grab (pH, Field Analysis, etc.)	Yes / No (Lab use only)
SAMPLE IDENTIFICATION (Name, Location, etc.)	Collection Collection Date Time	Other MATRIX			
170hp 6 Row 1	1-25 Hunte	17/105116 13/105/1016	MA	(5-160)	
2	TO TOO	3			
3					
4					
5 / 5					
6					
7 1 1 1 1	1 1	1	1	(
Custody Record MUST be	it follows	Date/Time: イーストーナラ 11120 /4 /11	Received by:		Date/Time:
Signed Sample Disposal:	Return to client:	Lab dispos	al:	Log#	718

Copies to:

White - Book in Laboratory

Yellow - Laboratory Hard Copy

Pink - Client

Attachment: #4. Dry Creek Water Reclamation Facility

F. Pathogen reduction is accomplished through anaerobic digestion. The primary and secondary digested sludge is treated in the absence of air for mean cell residence time and temperature between 25 and 35 days at 92 to 100 degrees Fahrenheit. Air dried sludge is obtained with a tractor aerator on paved drying beds and on site unpaved storage area in windrows that are turned approximately once a month dependant on the weather conditions.

The Biosolids production (dry weight) at the Dry Creek WRF is over 1500 metric tons a year. Therefore samples are collected six times a year (February, April, May, June, August, October, and December). The laboratories analyze the dry samples for metals, nutrients, organics pathogens, volatile solids and total solids.

CERTIFICATION STATEMENT

I certify under the penalty of law, that the pathogen requirements in Part I.C.3, the management practices in Part I.D (if necessary) (including the practice in part I.D.13 if the table 4 annual pollutant limits are used) and the site restrictions in Part I.C.2 (if necessary) have been met. This determination has been made under my direction and supervision in accordance with the system designed to assure that qualified personnel properly gather and evaluate the information used to determine that pathogen requirements, the vector attraction reduction requirements, the management practices and the site restrictions have been met. I am aware that there are significant penalties for false certification including the possibility of imprisonment.

Signature

Jim Waughes, Manager

Water Reclamation Division

Attachment: #5. Dry Creek Water Reclamation Facility

G. Vector attraction reduction requirements are met through anaerobic digestion when there is thirty eight percent or more reduction in volatile solids. Volatile solids destruction is measured weight by volume average ((Vol. Solids Reduction = VS in - VS out / (VS in -((VS in * VS out)) (Use Average). The sludge is also air dried in windrows for further vector attraction reduction. The dry solids in windrows are between 65% to 80% total volatile solids reduction before land application.

RE: Flows From: Primary North and Primary South Raw sludge Average: Total solids (change % to Mg/l (10000) (NRS & SRS): Total Vol Solids (NRS & SRS): Total C-2 (wasting) cake flow gal: C-1 (digested) Solids (mg/L) cake: C-1 Vol solids cake (mg/L): C-2 solids cake (mg/L): C-2 Vol Solids cake (mg/L) Cake flow from Rotary Drum Thicker to digester.

CERTIFICATION STATEMENT

I certify under the penalty of law, that the pathogen requirements in Part I.C.2, one of the vector attraction reduction alternatives in Part I.C.3, the management in part I.D (if necessary) (including practices in Part I.D.13 if the table 4 annual pollutant limits are used) and the site restrictions in part I.C.2 (if necessary) have been met. This determination has been made under my direction and supervision in accordance with information used to determine that the pathogen requirements, the vector attraction reduction requirements, the management practices and the site restrictions have been met. I am aware that there are significant penalties for false certification possibility including the imprisonment.

Signature

Jim Hughes, Manager

Water Reclamation Division

Attachment: #6. Dry Creek Water Reclamation Facility

H. Best management practices are accomplished by applying biosolids at a whole sludge application rate that is less than or equal to the agronomic rate for the specific site and plant species. The Biosolids are applied so that it does not adversely affect a threatened or endangered species.

Biosolids are not dispersed on sites that are flooded or snow covered, frozen ground with a slope of three percent or more to prevent run off into wetland or surface water. A buffer zone of thirty-five feet from waterways, stock wells, and surface water is observed. Biosolids land applications are prohibited to sites where the available phosphorous content of the existing soil exceeds 400 pounds per acre.

Stored Biosolids on the plant facility remain in windrows for two years or less. The Biosolids are land applied in the winter, spring and fall of the year, weather permitting. Biosolids and soil are analytically tested before disposal. Cheyenne's sludge management practice ensures compliance with both Federal and State parameters and provides for long term Biosolids procedures with little or no detriment to the environment, while enhancing the native grass and field crop production of those participating ranchers and farmers who utilize Biosolids as a fertilizer supplement and soil conditioner.

CERTIFICATION STATEMENT

I certify under the penalty of law that the pathogen requirements in Part I.C.2, one of the vector attraction reduction alternatives in Part I.C.3, the management practices in part I.D (if necessary) (including in the practices in Part I.D.13 if the table 4 annual pollutant limits are used) and the site restrictions in Part I.C.2 (if necessary) have been met. This determination has been made under my direction and supervision in accordance with the system designed to assure that qualified personal properly gather and evaluate the information used to determine that the pathogen requirements, the management practices and the site restrictions have been met. I am aware that there are significant penalties for false certification including the possibility of imprisonment.

Signature

Jim Hughes, Manager

Water Reclamation Division

Attachment: #7.

Dry Creek Water Reclamation Facility

I. Site restrictions are first achieved through the quality of sewage sludge product which has been stabilized to reduce pathogenic organisms, which has been dried to a solids concentration of sixty percentile or greater and contains no hazardous or toxic compounds or chemicals in concentrations which exceed those authorized by the USA EPA REGION VIII and WYOMING DEQ for land application in Part C.1, Specific Limitations and Self Monitoring Requirements and Chemical Pollutant Limitations.

The dry sludge that is produced is class A and B which are applied primarily to range land. Before applying sewage sludge on rangeland, pastureland, farm land, or fields, soil samples have been collected and have had the appropriate soil analysis conducted.

The <u>Class B</u> Sludge with respect to pathogens has been in compliance with the entire site restrictions listed in Part I.C.2. No sludge or material derived from sludge exceeds the limits in Table 3 Part I.C.1. The <u>Class A</u> pathogen reduction limits in Part I.C.2 meets the first 4 vector attraction reduction alternatives in Part I.C.3. There are sufficient management practices used to prevent malfunctions and deterioration, operator errors and discharges which may cause or lead to the release of sludge to the environment, a threat to human health or a nuisance.

CERTIFICATION STATEMENT

I certify under the penalty of law, that the pathogen requirements in Part I.C.2, one of the vector attraction reduction alternatives in Part I.C.3, the management practices in Part I.D (if necessary) including the practice in Part I.D.13 if the table 4 annual pollutant limits are used) and the site restrictions in Part I.C.2 (if necessary) have been met. This determination has been made under my direction and supervision in accordance with the system designed to assure that qualified personnel properly gather and evaluate the information used to determine that the pathogen requirements, the vector attractions reduction the management requirements, practices and the restrictions have been met. I am aware that there are significant penalties for false certification including the possibility of imprisonment.

Signature

Jim Hughes, Manager



ANALYTICAL RESULTS

DRY CREEK WWTP LABORATORY

Cheyenne BOPU 8911 Campstool Road Cheyenne, Wyoming 82007 Phone: 307-635-3163 Fax: 307-635-6833

Date Sampled: 09/25/13

Date Received: 09/25/13 Sample Location: Zone A

Sample Matrix: Compost

Sampled By: CB

Date Reported: 10/15/13 Date Fecal Analyzed: NA

Date Solids Analyzed: 10/02/13

Analyst(s): mw

EPA Method/Total Solids:

SM 19th Ed 2540B EPA Method/Volatile Solids: SM 19th Ed 2540E

EPA Method/Fecal Coliform: SM 18th Ed 9221E (A-1 Media)

Fecal Coliform/

Row #	Total Solids %	Volatile Solids%	Dry Gram Sludge
1	76.2	25.0	NA
2	67.0	24.7	NA .
3	68.4	27.1	NA
4	67.3	40.4	NA
5	69.4	28.0	NA
6	62.3	37.3	NA
7	60.8	35.9	NA
8	61.1	51.2	NA
9	63.2	53.4	NA

Comments:

All data meets QA/QC requirements; please see QA/QC files in Dry Creek Laboratory.

NA = Not Analyzed

Kent Loader, Laboratory Supervisor

10.24·13

Dry Creek WRF Laboratory For: TS & VS

Identification Reporting: No. WYSL - 22934

Permit No. WYG - <u>650002</u>

(Cheyenne BOPU) Dry Creek Water Reclamation Facility

Samples and Analytical

Quality Assurance/Quality Control OA/QC

Date: 9-25-13 | Time: 11/30 | [] (M) [] PM

Analytical Sampling Records (Cheyenne BOPU) Dry Creek WRF Laboratory

[] Dates and time of samples collected
[] Sampling location documented
[] Sampling types appropriate
[] Sampling volumes recorded
[] Name of person sampling
[] Types of sampling containers
[] Methods of preservation
[] Sampling quality assurance/ quality control QA/QC available
[] Pollutant limits red flagged if over mg/kg (Table 1,2,3,4 and Section 503.13) (Class A and B Biosolids)
[] Certification statement signed with each laboratory analytical report:
1. Pathogen reduction
2. Vector attraction reduction operates at Dry Creek WRF analysis samples. Results from daily sheets and results, recorded daily.
3. Management Practices
4. Site restrictions
[] Class A sludge: average temperature, (volatile solids percent) and total solids Dry sludge) once a month. Turn rows once a month, <u>weather permitting</u> .
[] Chain of custody recorded
Date: 9-25-13 Time: 11:30 [] AM] PM

Analytical Records From: (Cheyenne BOPU) Dry Creek WRF To: (Cheyenne BOPU) Dry Creek WRF Laboratory

[] Date and time of samples analysis	
[] Date and time of samples analysis	
[] Name of analyst	
[] All analyses are reported on dry weight basis	
[] Dry Creek WRF Laboratory 8911 Campstool Rd. Cheyenne, WY 82007 Ph: 307-635-3163 Fax: 307-635-6833	
[] Analytical quality assurance/quality control (QA/QC) available	
[] Analytical results available	
[] Chain of custody record	
Date: $9-25-1.3$ Time: $1/130$ [] AM [] PM	Į)

Analytical Records From: (Cheyenne BOPU) Dry Creek WRF To: (Cheyenne BOPU) Dry Creek WRF Laboratory

[] Date and time of sample
[] Name of analyst
[] Analytical methods used
[] Analyses and calculation results properly documented or verified
[] All analysis are reported on dry weight basis with the exception of volatile solids or total solids in percent. (1quart plastic bag 450 grams) (7 quart plastic bags 3150 grams).
[] Volatile solids and total solids samples need to be analyzed six times a year for Class B Biosolids and 12 times a year for Class A Biosolids.
[] Analytical quality assurance/quality control (QA/QC) available
[] Analytical results available
[] Chain of custody record

Zone: A Rows: $1 - \frac{9}{3}$ Date: 9 - 2513 Time: 11/30 [] AM/[] PM

Analytical Sample Containers From: (Cheyenne BOPU) Dry Creek WRF To: (Cheyenne BOPU) Dry Creek WRF Laboratory

Dry Sludge for fecal results in MPN, and percent solids for Class A or Class B Biosolids. 1 quart Plastic bags 450 grams: 7 Quart Plastic bags total of 3150 grams. Fecal samples and results are analyzed at the Dry Creek WRF Laboratory in with six hours of the holding time. The results of fecal samples in (MPN) and (percent solids) need to be analyzed in, *February, April, June, August, October, and December. **January, March, May, July, September and November; test for TS and VS. Class A test for Helminth ova density limits > 1 egg/4g TS; Enteric virus density limits of > 1 PFU/4g

- 1. *' **Class A sludge < 1000 MPN/gram. (Test 12 times a year for TS and VS).
- 2. * Class B sludge < 2,000,000 MPN/gram
- 3. Percent solids, 75 % or better for Class A Biosolids and Class B Biosolids.
- 4. Chain of custody record

Zone: A Rows: $1 - \frac{C_1}{2}$ Date: $\frac{C_1 - 25 - 13}{2}$ Time: $\frac{1}{2}$ Time: $\frac{1}{2}$ [] AM [] PM

Project Name: 15/050/15/5
Location: Dry Creek WRF.
Address: 8911 Camps tool Rd.
City: Cheyenne State: Wy Zip Code: 82007.
City: Cheyen Me State: Wy Zip Code: 82007. Samples Collected by: Chet Barbus [Date/Time: 9-25-13/1/130.4m]
Analytical Certification
This certification must be completed by the Analytical Laboratory performing service for the Cheyenne Board of Public Utilities and submitted with each "Analytical Report.
"I certify that these analysis and resulting report (s) were prepared under my direction and supervision in accordance with a system designed to assure that qualified personal properly analyze all samples and accurately report the results. I certify that all analysis were performed in accordance with method approved for wastewater under the latest revision to 40 CFR Part 503 Sludge Regulation. Based on my inquiry of the person or persons who manage the system, or those person directly responsible for analyzing, the wastewater samples and generating the report (s), the analysis, report, and information submitted is to the best on my knowledge and belief, true, accurate, and completed."
Name of Laboratory: Dry Creek war.
Address: 8911 Camp 55 tool Rd
City: (heyenne State: Ly Zip Code: 82007.
Name of Analyst:
This Certification is signed by:
Date: 10.29.13 Time: 1 AM [] PM



Chain of Custody and Analytical Request Record PLEASE PRINT CLEARLY, provide as much information as possible

		7
Page _	#_	_of

Client's Name:	Client's Name: Ory Crook Luk Contact Name: A land Sampler's Name (if other than Contact):											
Report Required F	For: 6,000 1	116		Number of Containers	ANALY	SIS R	EQUE	STEC	How Preserved	Sample <u>Type</u>	Other Information	Analysis Completed
2016 A	Rody 1	- 7		Sample Type A W S V B O Air Water Soils/Solids Yegetation Bioassay					HNO ₃ H ₂ SO ₄ 4°C HCL None	Grab or Composite	(pH, Field Analysis, etc.)	Yes / No (Lab use only)
SAMPLE IDEN (Name, Loca		Date	Collection Time	<u>O</u> ther MATRIX	75							
120nc A.	Robert	12	10.40 11 mg	1 Property					MA	(r/a)		
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3	/ *											
4												
5			and the second second									
6	6				Ü di, minute analasi							
7	1 7								1	1/		
Custody Record MUST be	Relinquished by:	A May	Jul	Date/Time:					() o.	()		Date/Time:
Signed	Sample Disposal:	Return to	client:		Lab di	sposal:			\		Log# å	716

Copies to:

White - Book in Laboratory

Yellow - Laboratory Hard Copy

Pink - Client

Cheyenne Board of Public Utilities Water Reclamation Laboratory

Chain of Custody and Analytical Request Record
PLEASE PRINT CLEARLY, provide as much information as possible

Client's Name: <u>∬</u> 火火 〔	Client's Name: <u>∬vy Cerklokk</u> Contact Name: <u>(\ </u>														
Report Required For: 15,050 1, 15			Number of Containers Sample Type A W S V B O Air <u>W</u> ater Soils/Solids Vegetation Bioassay		ALY	(SIS	RE	QUE	STE		How Preserved HNOs H2SO4 4°C HCL None	Sample Type Grab or Composite	Other Information (pH, Field Analysis, etc.)	Analysis <u>Completed</u> Yes / No (Lab use only)	
SAMPLE IDEN (Name, Loca		Collection Date	Collection Time	<u>O</u> ther MATRIX	2	2						1A a			
1201104		9-21	10 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	18/10/511C	- Tank of the manager	-14()						IVI	<u></u>		
2	19		ć		$\overline{\Psi}$	7									
3															
4															
5															
6	,														
7															
Custody Record MUST be			Date/Time:										Date/Time:		
Signed	Lab disposal:										Log# 7 1 7				
	Sample Disposal: Return to client: Lab disposal: Log# Log#														

Copies to:

White - Book in Laboratory

Yellow - Laboratory Hard Copy

Pink - Client

Attachment: #4. Dry Creek Water Reclamation Facility

F. Pathogen reduction is accomplished through anaerobic digestion. The primary and secondary digested sludge is treated in the absence of air for mean cell residence time and temperature between 25 and 35 days at 92 to 100 degrees Fahrenheit. Air dried sludge is obtained with a tractor aerator on paved drying beds and on site unpaved storage area in windrows that are turned approximately once a month dependant on the weather conditions.

The Biosolids production (dry weight) at the Dry Creek WRF is over 1500 metric tons a year. Therefore samples are collected six times a year (February, April, May, June, August, October, and December). The laboratories analyze the dry samples for metals, nutrients, organics pathogens, volatile solids and total solids.

CERTIFICATION STATEMENT

I certify under the penalty of law, that the pathogen requirements in Part I.C.3, the management practices in Part I.D (if necessary) (including the practice in part I.D.13 if the table 4 annual pollutant limits are used) and the site restrictions in Part I.C.2 (if necessary) have been met. This determination has been made under my direction and supervision in accordance with the system designed to assure that qualified personnel properly gather and evaluate the information used to determine that pathogen requirements, the vector attraction reduction requirements, the management practices and the site restrictions have been met. I am aware that there are significant penalties for false certification including the possibility of imprisonment.

Signature

Jim Hughes, Manager

Water Reclamation Division

Attachment: #5. Dry Creek Water Reclamation Facility

G. Vector attraction reduction requirements are met through anaerobic digestion when there is thirty eight percent or more reduction in volatile solids. Volatile solids destruction is measured weight by volume average ((Vol. Solids Reduction = VS in - VS out / (VS in -((VS in * VS out)) (Use Average). The sludge is also air dried in windrows for further vector attraction reduction. The dry solids in windrows are between 65% to 80% total volatile solids reduction before land application.

RE: Flows From: Primary North and Primary South Raw sludge Average: Total solids (change % to Mg/l (10000) (NRS & SRS): Total Vol Solids (NRS & SRS): Total C-2 (wasting) cake flow gal: C-1 (digested) Solids (mg/L) cake: C-1 Vol solids cake (mg/L): C-2 solids cake (mg/L): C-2 Vol Solids cake (mg/L) Cake flow from Rotary Drum Thicker to digester.

CERTIFICATION STATEMENT

I certify under the penalty of law, that the pathogen requirements in Part I.C.2, one of the vector attraction reduction alternatives in Part I.C.3, the management (if necessary) practices in part I.D (including practices in Part I.D.13 if the table 4 annual pollutant limits are used) and the site restrictions in part I.C.2 (if necessary) have been met. This determination has been made under my direction and supervision in accordance with information used to determine that the pathogen requirements, the vector attraction reduction requirements, the management practices and the site restrictions have been met. I am aware that there are significant penalties for false certification including the possibility imprisonment.

Signature

Jim Hughes, Manager

Water Reclamation Division

Attachment: #6. Dry Creek Water Reclamation Facility

H. Best management practices are accomplished by applying biosolids at a whole sludge application rate that is less than or equal to the agronomic rate for the specific site and plant species. The Biosolids are applied so that it does not adversely affect a threatened or endangered species.

Biosolids are not dispersed on sites that are flooded or snow covered, frozen ground with a slope of three percent or more to prevent run off into wetland or surface water. A buffer zone of thirty-five feet from waterways, stock wells, and surface water is observed. Biosolids land applications are prohibited to sites where the available phosphorous content of the existing soil exceeds 400 pounds per acre.

Stored Biosolids on the plant facility remain in windrows for two years or less. The Biosolids are land applied in the winter, spring and fall of the year, weather permitting. Biosolids and soil are analytically tested before disposal. Cheyenne's sludge management practice ensures compliance with both Federal and State parameters and provides for long term Biosolids procedures with little or no detriment to the environment, while enhancing the native grass and field crop production of those participating ranchers and farmers who utilize Biosolids as a fertilizer supplement and soil conditioner.

CERTIFICATION STATEMENT

I certify under the penalty of law that the pathogen requirements in Part I.C.2, one of the vector attraction reduction alternatives in Part I.C.3, the management practices in part I.D (if necessary) (including in the practices in Part I.D.13 if the table 4 annual pollutant limits are used) and the site restrictions in Part I.C.2 (if necessary) have been met. This determination has been made under my direction and supervision in accordance with the system designed to assure that qualified personal properly gather and evaluate the information used to determine that the pathogen requirements, the management practices and the site restrictions have been met. I am aware that there are significant penalties for false certification including the possibility of imprisonment.

Signature

Jim Hughes, Manager

Water Reclamation Division Attachment: #7.

Dry Creek Water Reclamation Facility

I. Site restrictions are first achieved through the quality of sewage sludge product which has been stabilized to reduce pathogenic organisms, which has been dried to a solids concentration of sixty percentile or greater and contains no hazardous or toxic compounds or chemicals in concentrations which exceed those authorized by the USA EPA REGION VIII and WYOMING DEQ for land application in Part C.1, Specific Limitations and Self Monitoring Requirements and Chemical Pollutant Limitations.

The dry sludge that is produced is class \underline{A} and \underline{B} which are applied primarily to range land. Before applying sewage sludge on rangeland, pastureland, farm land, or fields, soil samples have been collected and have had the appropriate soil analysis conducted.

The <u>Class B</u> Sludge with respect to pathogens has been in compliance with the entire site restrictions listed in Part I.C.2. No sludge or material derived from sludge exceeds the limits in Table 3 Part I.C.1. The <u>Class A</u> pathogen reduction limits in Part I.C.2 meets the first 4 vector attraction reduction alternatives in Part I.C.3. There are sufficient management practices used to prevent malfunctions and deterioration, operator errors and discharges which may cause or lead to the release of sludge to the environment, a threat to human health or a nuisance.

CERTIFICATION STATEMENT

I certify under the penalty of law, that the pathogen requirements in Part I.C.2, one of the vector attraction reduction alternatives in Part I.C.3, the management practices in Part I.D (if necessary) including the practice in Part I.D.13 if the table 4 annual pollutant limits are used) and the site restrictions in Part I.C.2 (if necessary) have been met. This determination has been made under my direction and supervision in accordance with the system designed to assure that qualified personnel properly gather and evaluate the information used to determine that the pathogen requirements, the vector attractions reduction practices requirements, the management and the restrictions have been met. I am aware that there are significant penalties for false certification including the possibility of imprisonment.

Signature

Jim Hughes, Manager



ANALYTICAL RESULTS

DRY CREEK WWTP LABORATORY

Cheyenne BOPU 8911 Campstool Road Cheyenne, Wyoming 82007 Phone: 307-635-3163 Fax: 307-635-6833

Date Sampled: 07/09/13

Date Received: 07/09/13

Sample Location: Zone E

Sample Matrix: Compost

Sampled By: CB

Date Reported: 08/07/13

Date Fecal Analyzed: NA

Date Solids Analyzed: 07/11/13

Analyst(s): mw

EPA Method/Total Solids:

SM 19th Ed 2540B

EPA Method/Volatile Solids: SM 19th Ed 2540E

EPA Method/Fecal Coliform: SM 18th Ed 9221E (A-1 Media)

Fecal Coliform/

Row #	Total Solids %	Volatile Solids%	Dry Gram Sludge
1	90.1	36.1	NA
2	88.6	37.0	NA .
3	91.8	42.4	NA
4	87.8	36.1	NA
5	86.7	38.3	NA
6	89.1	40.9	NA
7	91.2	41.0	NA
8	90.4	31.3	NA
9	85.7	43.7	NA

Comments:

All data meets QA/QC requirements; please see QA/QC files in Dry Creek Laboratory. NA = Not Analyzed

Kent Loader, Laboratory Supervisor

Page 1 of 1

Dry Creek WRF Laboratory For: TS & VS

Identification Reporting: No. WYSL - 22934

Permit No. WYG - <u>650002</u>

(Cheyenne BOPU) Dry Creek Water Reclamation Facility

Samples and Analytical

Quality Assurance/Quality Control OA/QC

Date: 7-9-13 | Time: 10/30 | [] AM/[] PM

<u>Analytical Sampling Records</u> (Cheyenne BOPU) Dry Creek WRF Laboratory

[] Dates and time of samples collected

[] Sampling location documented
[] Sampling types appropriate
[] Sampling volumes recorded
[] Name of person sampling
[] Types of sampling containers
[] Methods of preservation
[] Sampling quality assurance/ quality control QA/QC available
[] Pollutant limits red flagged if over mg/kg (Table 1,2,3,4 and Section 503.13) (Class A and B Biosolids)
[] Certification statement signed with each laboratory analytical report:
1. Pathogen reduction
2. Vector attraction reduction operates at Dry Creek WRF analysis samples. Results from daily sheets and results, recorded daily.
3. Management Practices
4. Site restrictions
[] Class A sludge: average temperature, (volatile solids percent) and total solids Dry sludge) once a month. Turn rows once a month, weather permitting.
[] Chain of custody recorded
Date: 7-9-13 Time: 10130 [] (M) [] PM

Analytical Records From: (Cheyenne BOPU) Dry Creek WRF To: (Cheyenne BOPU) Dry Creek WRF Laboratory

[] Date and time of samples analysis
[] Name of analyst
[] All analyses are reported on dry weight basis
[] Dry Creek WRF Laboratory
8911 Campstool Rd.
Cheyenne, WY 82007
Ph: 307-635-3163
Fax: 307-635-6833
[] Analytical quality assurance/quality control (QA/QC) available
[] Analytical results available
[] Chain of custody record

Date: 7-9-13 | Time: 10:30 | [] [M] PM

Analytical Records From: (Cheyenne BOPU) Dry Creek WRF To: (Cheyenne BOPU) Dry Creek WRF Laboratory

	Date and time of sample
	Name of analyst
[]	Analytical methods used
[]	Analyses and calculation results properly documented or verified
[]	All analysis are reported on dry weight basis with the exception of volatile solids or total solids in percent. (1quart plastic bag 450 grams) (7 quart plastic bags 3150 grams).
[]	Volatile solids and total solids samples need to be analyzed six times a year for Class B Biosolids and 12 times a year for Class A Biosolids.
[]	Analytical quality assurance/quality control (QA/QC) available
	Analytical results available
	Chain of custody record

Zone: F | Rows: 1 - 7 | Date: 7-9-13 | Time: 10.30 | [] AM [] PM

Analytical Sample Containers From: (Cheyenne BOPU) Dry Creek WRF To: (Cheyenne BOPU) Dry Creek WRF Laboratory

Dry Sludge for fecal results in MPN, and percent solids for Class A or Class B Biosolids. 1 quart Plastic bags 450 grams: 7 Quart Plastic bags total of 3150 grams. Fecal samples and results are analyzed at the Dry Creek WRF Laboratory in with six hours of the holding time. The results of fecal samples in (MPN) and (percent solids) need to be analyzed in, *February, April, June, August, October, and December. **January, March, May, July, September and November; test for TS and VS. Class A test for Helminth ova density limits > 1 egg/4g TS; Enteric virus density limits of > 1 PFU/4g

- 1. *' **Class A sludge < 1000 MPN/gram. (Test 12 times a year for TS and VS).
- 2. * Class B sludge < 2,000,000 MPN/gram
- 3. Percent solids, 75 % or better for Class A Biosolids and Class B Biosolids.
- 4. Chain of custody record

Zone: F Rows: 1 - 7 Date: 7 - 9 - 13 Time: 10/30 [] AM [] PM

Project Name: 6 (0.50) 166								
Location: Dry Creek WRF.								
Address: 8911 Campstoul Rd.								
City: Cheyenne State: 11 Zip Code: 82007.								
Samples Collected by: Chet Bubill. [Date/Time: 7-9-13/10/3017m]								
Analytical Certification								
This certification must be completed by the Analytical Laboratory performing service for the Cheyenne Board of Public Utilities and submitted with each "Analytical Report.								
"I certify that these analysis and resulting report (s) were prepared under my direction and supervision in accordance with a system designed to assure that qualified personal properly analyze all samples and accurately report the results. I certify that all analysis were performed in accordance with method approved for wastewater under the latest revision to 40 CFR Part 503 Sludge Regulation. Based on my inquiry of the person or persons who manage the system, or those person directly responsible for analyzing, the wastewater samples and generating the report (s), the analysis, report, and information submitted is to the best on my knowledge and belief, true, accurate, and completed."								
Name of Laboratory: Dry Creek WRF.								
Address: 8911 Camps Town Rd.								
City: Cheyenne State: 1 y Zip Code: 82007.								
Name of Analyst:								
This Certification is signed by:								
Date: 70.29.63 Time: AM [] PM								



Chain of Custody and Analytical Request Record
PLEASE PRINT CLEARLY, provide as much information as possible

Page	 of	2
Page	 ΟĪ	

Client's Name: Dely Core to UK #Contact Name: At the Poul Mampler's Name (if other than Contact):									
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		Soils/Solids		4°C Composite					
		Yegetation Bioassay \ A		HCL None					
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Signed Sample Disposal:	Return to client:	Lab dispo			Log# 727				

Copies to:

White - Book in Laboratory

Yellow - Laboratory Hard Copy

Pink - Client



Chain of Custody and Analytical Request Record PLEASE PRINT CLEARLY, provide as much information as possible

Page L of L

Client's Name: 1/4 COBE WRF Contact Name: Ch UT Bendul Sampler's Name (if other than Contact):														
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Copies to:

White - Book in Laboratory

Yellow - Laboratory Hard Copy

Pink - Client

Attachment: #4. Dry Creek Water Reclamation Facility

F. Pathogen reduction is accomplished through anaerobic digestion. The primary and secondary digested sludge is treated in the absence of air for mean cell residence time and temperature between 25 and 35 days at 92 to 100 degrees Fahrenheit. Air dried sludge is obtained with a tractor aerator on paved drying beds and on site unpaved storage area in windrows that are turned approximately once a month dependant on the weather conditions.

The Biosolids production (dry weight) at the Dry Creek WRF is over 1500 metric tons a year. Therefore samples are collected six times a year (February, April, May, June, August, October, and December). The laboratories analyze the dry samples for metals, nutrients, organics pathogens, volatile solids and total solids.

CERTIFICATION STATEMENT

I certify under the penalty of law, that the pathogen requirements in Part I.C.3, the management practices in Part I.D (if necessary) (including the practice in part I.D.13 if the table 4 annual pollutant limits are used) and the site restrictions in Part I.C.2 (if necessary) have been met. This determination has been made under my direction and supervision in accordance with the system designed to assure that qualified personnel properly gather and evaluate the information used to determine that pathogen requirements, the vector attraction reduction requirements, the management practices and the site restrictions have been met. I am aware that there are significant penalties for false certification including the possibility of imprisonment.

Signature

Jim Hughes, Manager

Water Reclamation Division

Attachment: #5. Dry Creek Water Reclamation Facility

G. Vector attraction reduction requirements are met through anaerobic digestion when there is thirty eight percent or more reduction in volatile solids. Volatile solids destruction is measured weight by volume average ((Vol. Solids Reduction = VS in - VS out / (VS in -((VS in * VS out))(Use Average). The sludge is also air dried in windrows for further vector attraction reduction. The dry solids in windrows are between 65% to 80% total volatile solids reduction before land application.

RE: Flows From: Primary North and Primary South Raw sludge Average: Total solids (change % to Mg/l (10000) (NRS & SRS): Total Vol Solids (NRS & SRS): Total C-2 (wasting) cake flow gal: C-1 (digested) Solids (mg/L) cake: C-1 Vol solids cake (mg/L): C-2 solids cake (mg/L): C-2 Vol Solids cake (mg/L) Cake flow from Rotary Drum Thicker to digester.

CERTIFICATION STATEMENT

I certify under the penalty of law, that the pathogen requirements in Part I.C.2, one of the vector attraction reduction alternatives in Part I.C.3, the management practices in part I.D (if necessary) (including practices in Part I.D.13 if the table 4 annual pollutant limits are used) and the site restrictions in part I.C.2 (if necessary) have been met. This determination has been made under my direction and supervision in accordance with information used to determine that the pathogen requirements, the vector attraction reduction requirements, the management practices and the site restrictions have been met. I am aware that there are significant penalties for certification including the possibility imprisonment.

Signature

Jim Hughes, Manager

Water Reclamation Division

Attachment: #6. Dry Creek Water Reclamation Facility

H. Best management practices are accomplished by applying biosolids at a whole sludge application rate that is less than or equal to the agronomic rate for the specific site and plant species. The Biosolids are applied so that it does not adversely affect a threatened or endangered species.

Biosolids are not dispersed on sites that are flooded or snow covered, frozen ground with a slope of three percent or more to prevent run off into wetland or surface water. A buffer zone of thirty-five feet from waterways, stock wells, and surface water is observed. Biosolids land applications are prohibited to sites where the available phosphorous content of the existing soil exceeds 400 pounds per acre.

Stored Biosolids on the plant facility remain in windrows for two years or less. The Biosolids are land applied in the winter, spring and fall of the year, weather permitting. Biosolids and soil are analytically tested before disposal. Cheyenne's sludge management practice ensures compliance with both Federal and State parameters and provides for long term Biosolids procedures with little or no detriment to the environment, while enhancing the native grass and field crop production of those participating ranchers and farmers who utilize Biosolids as a fertilizer supplement and soil conditioner.

CERTIFICATION STATEMENT

I certify under the penalty of law that the pathogen requirements in Part I.C.2, one of the vector attraction reduction alternatives in Part I.C.3, the management practices in part I.D (if necessary) (including in the practices in Part I.D.13 if the table 4 annual pollutant limits are used) and the site restrictions in Part I.C.2 (if necessary) have been met. This determination has been made under my direction and supervision in accordance with the system designed to assure that qualified personal properly gather and evaluate the information used to determine that the pathogen requirements, the management practices and the site restrictions have been met. I am aware that there are significant penalties for false certification including the possibility of imprisonment.

Signature

Jim Hughes, Manager

Water Reclamation Division Attachment: #7.

Dry Creek Water Reclamation Facility

I. Site restrictions are first achieved through the quality of sewage sludge product which has been stabilized to reduce pathogenic organisms, which has been dried to a solids concentration of sixty percentile or greater and contains no hazardous or toxic compounds or chemicals in concentrations which exceed those authorized by the USA EPA REGION VIII and WYOMING DEQ for land application in Part C.1, Specific Limitations and Self Monitoring Requirements and Chemical Pollutant Limitations.

The dry sludge that is produced is class A and B which are applied primarily to range land. Before applying sewage sludge on rangeland, pastureland, farm land, or fields, soil samples have been collected and have had the appropriate soil analysis conducted.

The <u>Class B</u> Sludge with respect to pathogens has been in compliance with the entire site restrictions listed in Part I.C.2. No sludge or material derived from sludge exceeds the limits in Table 3 Part I.C.1. The <u>Class A</u> pathogen reduction limits in Part I.C.2 meets the first 4 vector attraction reduction alternatives in Part I.C.3. There are sufficient management practices used to prevent malfunctions and deterioration, operator errors and discharges which may cause or lead to the release of sludge to the environment, a threat to human health or a nuisance.

CERTIFICATION STATEMENT

I certify under the penalty of law, that the pathogen requirements in Part I.C.2, one of the vector attraction reduction alternatives \mathtt{in} Part I.C.3, the management practices in Part I.D (if necessary) including the practice in Part I.D.13 if the table 4 annual pollutant limits are used) and the site restrictions in Part I.C.2 (if necessary) have been met. This determination has been made under my direction and supervision in accordance with the system designed to assure that qualified personnel properly gather and evaluate the information used to determine that the pathogen requirements, the vector attractions reduction management requirements, the practices and the restrictions have been met. I am aware that there are significant penalties for false certification including the possibility of imprisonment.

Signature J

Jim Hughes, Manager



ANALYTICAL RESULTS

DRY CREEK WWTP LABORATORY

Cheyenne BOPU 8911 Campstool Road Cheyenne, Wyoming 82007 Phone: 307-635-3163 Fax: 307-635-6833

Date Sampled: 07/09/13

Date Received: 07/09/13 Sample Location: Zone D

Sample Matrix: Compost

Sampled By: CB

Date Reported: 08/07/13 Date Fecal Analyzed: NA

Date Solids Analyzed: 07/11/13

Analyst(s): mw

EPA Method/Total Solids:

SM 19th Ed 2540B

EPA Method/Volatile Solids: SM 19th Ed 2540E

EPA Method/Fecal Coliform: SM 18th Ed 9221E (A-1 Media)

Fecal Coliform/

Row #	Total Solids %	Volatile Solids %	Dry Gram Sludge
1	83.9	38.5	NA
2	87.3	39.4	NA .
3	84.3	42.6	NA
4	92.3	37.8	NA
5	89.7	46.6	NA

Comments:

All data meets QA/QC requirements; please see QA/QC files in Dry Creek Laboratory. NA = Not Analyzed

Kent Loader, Laboratory Supervisor

 $\frac{2-8-13}{2}$

Dry Creek WRF Laboratory For: TS & VS

Identification Reporting: No. WYSL - 22934

Permit No. WYG - <u>650002</u>

(Cheyenne BOPU) Dry Creek Water Reclamation Facility

Samples and Analytical

Quality Assurance/Quality Control OA/QC

Date: 7-9-13 | Time: 10:30 | [] AM [] PM

Analytical Sampling Records (Cheyenne BOPU) Dry Creek WRF Laboratory

[] Dates and time of samples collected
[] Sampling location documented
[] Sampling types appropriate
[] Sampling volumes recorded
[] Name of person sampling
[] Types of sampling containers
[] Methods of preservation
[] Sampling quality assurance/ quality control QA/QC available
[] Pollutant limits red flagged if over mg/kg (Table 1,2,3,4 and Section 503.13) (Class A and B Biosolids)
[] Certification statement signed with each laboratory analytical report:
1. Pathogen reduction
2. Vector attraction reduction operates at Dry Creek WRF analysis samples. Results from daily sheets and results, recorded daily.
3. Management Practices
4. Site restrictions
[] Class A sludge: average temperature, (volatile solids percent) and total solids Dry sludge) once a month. Turn rows once a month, <u>weather permitting</u> .
[] Chain of custody recorded
Date: 7-9-13 Time: 10'130 [] AM [] PM

Analytical Records From: (Cheyenne BOPU) Dry Creek WRF To: (Cheyenne BOPU) Dry Creek WRF Laboratory

[] Date and time of sample
[] Name of analyst
[] Analytical methods used
[] Analyses and calculation results properly documented or verified
[] All analysis are reported on dry weight basis with the exception of volatile solids or total solids in percent. (1quart plastic bag 450 grams) (7 quart plastic bags 3150 grams).
[] Volatile solids and total solids samples need to be analyzed six times a year for Class B Biosolids and 12 times a year for Class A Biosolids.
[] Analytical quality assurance/quality control (QA/QC) available
[] Analytical results available
[] Chain of custody record

Zone: $\boxed{0}$ | Rows: $\boxed{-5}$ | Date: $\boxed{7-9-13}$ | Time: $\boxed{0/30}$ | $\boxed{0}$ | PM

Analytical Records From: (Cheyenne BOPU) Dry Creek WRF To: (Cheyenne BOPU) Dry Creek WRF Laboratory

[] Date and time of samples analysis
[] Name of analyst
[] All analyses are reported on dry weight basis
[] Dry Creek WRF Laboratory 8911 Campstool Rd. Cheyenne, WY 82007 Ph: 307-635-3163 Fax: 307-635-6833
[] Analytical quality assurance/quality control (QA/QC) available
[] Analytical results available
[] Chain of custody record

Date: 7-9-13 | Time: 10/30 | [] AM [] PM

Analytical Sample Containers From: (Cheyenne BOPU) Dry Creek WRF To: (Cheyenne BOPU) Dry Creek WRF Laboratory

Dry Sludge for fecal results in MPN, and percent solids for Class A or Class B Biosolids. 1 quart Plastic bags 450 grams: 7 Quart Plastic bags total of 3150 grams. Fecal samples and results are analyzed at the Dry Creek WRF Laboratory in with six hours of the holding time. The results of fecal samples in (MPN) and (percent solids) need to be analyzed in, *February, April, June, August, October, and December. **January, March, May, July, September and November; test for TS and VS. Class A test for Helminth ova density limits > 1 egg/4g TS; Enteric virus density limits of > 1 PFU/4g

- 1. *' **Class A sludge < 1000 MPN/gram. (Test 12 times a year for TS and VS).
- 2. * Class B sludge < 2,000,000 MPN/gram
- 3. Percent solids, 75 % or better for Class A Biosolids and Class B Biosolids.
- 4. Chain of custody record

Zone: \mathcal{D} | Rows: 1 - 5 | Date: 7 - 9 - 13 | Time: 10/30 | AM | PM

Project Name: 18,050/,25				
Location: Dry Creek WRF.				
Address: 8911 CampstoolRd.				
City: (heyenne State! y Zip Code: \$\frac{1}{2007}. Samples Collected by: (het Bubul .[Date/Time: 7-19-13 10:30Am)				
Samples Collected by: Chet Bubul .[Date/Time: 7-19-13 / 10:30 Am				
Analytical Certification				
This certification must be completed by the Analytical Laboratory performing service for the Cheyenne Board of Public Utilities and submitted with each "Analytical Report.				
"I certify that these analysis and resulting report (s) were prepared under my direction and supervision in accordance with a system designed to assure that qualified personal properly analyze all samples and accurately report the results. I certify that all analysis were performed in accordance with method approved for wastewater under the latest revision to 40 CFR Part 503 Sludge Regulation. Based on my inquiry of the person or persons who manage the system, or those person directly responsible for analyzing, the wastewater samples and generating the report (s), the analysis, report, and information submitted is to the best on my knowledge and belief, true, accurate, and completed."				
Name of Laboratory: Dry Creek was .				
Address: 8911 Cam p57001 Rd.				
City: Cheyenne State: My Zip Code: 82007.				
Name of Analyst: fent log.				
This Certification is signed by:				
Date: 10.29.13 Time: 8 JAM [] PM				



Chain of Custody and Analytical Request Record PLEASE PRINT CLEARLY, provide as much information as possible

Page ____ of

					<u>-</u>								-
Clie	nt's Name://	coup u	<u> </u>	ct Name:	Chut		<u> </u>	ark	bw	/ Sampler's∃	Name (if o	ther than Contact):	
Re	port Required F	or: Bioso 1 D Row	111	,	Number of Containers Sample Type	ANALY	SIS R	EQUE	STED	How Preserved	Sample	Other <u>Information</u>	Analysis Completed
-			5 1-		A W S V B O Air <u>W</u> ater <u>S</u> oils/ <u>S</u> olids <u>V</u> egetation <u>B</u> ioassay					HNO ₃ H ₂ SO ₄ 4°C HCL None	Grab or Composite	(pH, Field Analysis, etc.)	Yes / No (Lab use only)
	SAMPLE IDEN (Name, Locat		Collection Date	Collection Time	<u>O</u> ther MATRIX	77							
1	Zonen	Roul	7-39	9.45 AW	To 1837	A				MA	C-14h		
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3		3											
4		1											
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	Signed	Sample Disposal:	Return to	client:		Lab di	sposal:	/		West,		Log#	725

Copies to:

White - Book in Laboratory

Yellow - Laboratory Hard Copy

Pink - Client

Attachment: #4. Dry Creek Water Reclamation Facility

F. Pathogen reduction is accomplished through anaerobic digestion. The primary and secondary digested sludge is treated in the absence of air for mean cell residence time and temperature between 25 and 35 days at 92 to 100 degrees Fahrenheit. Air dried sludge is obtained with a tractor aerator on paved drying beds and on site unpaved storage area in windrows that are turned approximately once a month dependant on the weather conditions.

The Biosolids production (dry weight) at the Dry Creek WRF is over 1500 metric tons a year. Therefore samples are collected six times a year (February, April, May, June, August, October, and December). The laboratories analyze the dry samples for metals, nutrients, organics pathogens, volatile solids and total solids.

CERTIFICATION STATEMENT

I certify under the penalty of law, that the pathogen requirements in Part I.C.3, the management practices in Part I.D (if necessary) (including the practice in part I.D.13 if the table 4 annual pollutant limits are used) and the site restrictions in Part I.C.2 (if necessary) have been met. This determination has been made under my direction and supervision in accordance with the system designed to assure that qualified personnel properly gather and evaluate the information used to determine that pathogen requirements, the vector attraction reduction requirements, the management practices and the site restrictions have been met. I am aware that there are significant penalties for false certification including the possibility of imprisonment.

Signature

Jim Hughes, Manager

Water Reclamation Division

Attachment: #5. Dry Creek Water Reclamation Facility

G. Vector attraction reduction requirements are met through anaerobic digestion when there is thirty eight percent or more reduction in volatile solids. Volatile solids destruction is measured weight by volume average ((Vol. Solids Reduction = VS in - VS out / (VS in -((VS in * VS out)) (Use Average). The sludge is also air dried in windrows for further vector attraction reduction. The dry solids in windrows are between 65% to 80% total volatile solids reduction before land application.

RE: Flows From: Primary North and Primary South Raw sludge Average: Total solids (change % to Mg/l (10000) (NRS & SRS): Total Vol Solids (NRS & SRS): Total C-2 (wasting) cake flow gal: C-1 (digested) Solids (mg/L) cake: C-1 Vol solids cake (mg/L): C-2 solids cake (mg/L): C-2 Vol Solids cake (mg/L) Cake flow from Rotary Drum Thicker to digester.

CERTIFICATION STATEMENT

I certify under the penalty of law, that the pathogen requirements in Part I.C.2, one of the vector attraction alternatives in Part I.C.3, the management practices in part I.D (if necessary) (including practices in Part I.D.13 if the table 4 annual pollutant limits are used) and the site restrictions in part I.C.2 (if necessary) have been met. This determination has been made under my direction and supervision in accordance with information used to determine that the requirements, the vector attraction reduction requirements, the management practices and the site restrictions have been met. I am aware that there are significant penalties for certification including the possibility imprisonment.

Signature

Jim Hughes, Manager

Water Reclamation Division

Attachment: #6. Dry Creek Water Reclamation Facility

H. Best management practices are accomplished by applying biosolids at a whole sludge application rate that is less than or equal to the agronomic rate for the specific site and plant species. The Biosolids are applied so that it does not adversely affect a threatened or endangered species.

Biosolids are not dispersed on sites that are flooded or snow covered, frozen ground with a slope of three percent or more to prevent run off into wetland or surface water. A buffer zone of thirty-five feet from waterways, stock wells, and surface water is observed. Biosolids land applications are prohibited to sites where the available phosphorous content of the existing soil exceeds 400 pounds per acre.

Stored Biosolids on the plant facility remain in windrows for two years or less. The Biosolids are land applied in the winter, spring and fall of the year, weather permitting. Biosolids and soil are analytically tested before disposal. Cheyenne's sludge management practice ensures compliance with both Federal and State parameters and provides for long term Biosolids procedures with little or no detriment to the environment, while enhancing the native grass and field crop production of those participating ranchers and farmers who utilize Biosolids as a fertilizer supplement and soil conditioner.

CERTIFICATION STATEMENT

I certify under the penalty of law that the pathogen requirements in Part I.C.2, one of the vector attraction reduction alternatives in Part I.C.3, the management practices in part I.D (if necessary) (including in the practices in Part I.D.13 if the table 4 annual pollutant limits are used) and the site restrictions in Part I.C.2 (if necessary) have been met. This determination has been made under my direction and supervision in accordance with the system designed to assure that qualified personal properly gather and evaluate the information used to determine that the pathogen requirements, the management practices and the site restrictions have been met. I am aware that there are significant penalties for false certification including the possibility of imprisonment.

Signature

Jim Hughes, Manager

Water Reclamation Division Attachment: #7.

Dry Creek Water Reclamation Facility

I. Site restrictions are first achieved through the quality of sewage sludge product which has been stabilized to reduce pathogenic organisms, which has been dried to a solids concentration of sixty percentile or greater and contains no hazardous or toxic compounds or chemicals in concentrations which exceed those authorized by the USA EPA REGION VIII and WYOMING DEQ for land application in Part C.1, Specific Limitations and Self Monitoring Requirements and Chemical Pollutant Limitations.

The dry sludge that is produced is class A and B which are applied primarily to range land. Before applying sewage sludge on rangeland, pastureland, farm land, or fields, soil samples have been collected and have had the appropriate soil analysis conducted.

The <u>Class B</u> Sludge with respect to pathogens has been in compliance with the entire site restrictions listed in Part I.C.2. No sludge or material derived from sludge exceeds the limits in Table 3 Part I.C.1. The <u>Class A</u> pathogen reduction limits in Part I.C.2 meets the first 4 vector attraction reduction alternatives in Part I.C.3. There are sufficient management practices used to prevent malfunctions and deterioration, operator errors and discharges which may cause or lead to the release of sludge to the environment, a threat to human health or a nuisance.

CERTIFICATION STATEMENT

I certify under the penalty of law, that the pathogen requirements in Part I.C.2, one of the vector attraction reduction alternatives in Part I.C.3, the management practices in Part I.D (if necessary) including the practice in Part I.D.13 if the table 4 annual pollutant limits are used) and the site restrictions in Part I.C.2 (if necessary) have been met. This determination has been made under my direction and supervision in accordance with the system designed to assure that qualified personnel properly gather and evaluate the information used to determine that the pathogen requirements, the vector attractions reduction requirements, the management practices and the restrictions have been met. I am aware that there are significant penalties for false certification including the possibility of imprisonment.

Signature J Jim Hughes, Manager



ANALYTICAL RESULTS

DRY CREEK WWTP LABORATORY

Cheyenne BOPU 8911 Campstool Road Cheyenne, Wyoming 82007 Phone: 307-635-3163 Fax: 307-635-6833

Date Sampled: 07/09/13

Date Received: 07/09/13

Sample Location: Zone C

Sample Matrix: Compost

Sampled By: CB

Date Reported: 08/07/13 Date Fecal Analyzed: NA

Date Solids Analyzed: 07/11/13

Analyst(s): mw

EPA Method/Total Solids:

SM 19th Ed 2540B

EPA Method/Volatile Solids: SM 19th Ed 2540E

EPA Method/Fecal Coliform: SM 18th Ed 9221E (A-1 Media)

Row #	Total Solids %	Volatile Solids%	Fecal Coliform/ Dry Gram Sludge
1	82.8	41.2	NA .
2	91.1	31.6	NA
3	92.9	29.6	NA
4	88.8	49.5	NA
5	91.9	33.3	NA
6	89.0	50.0	NA
7	85.1	51.0	NA

Comments:

• All data meets QA/QC requirements; please see QA/QC files in Dry Creek Laboratory. NA = Not Analyzed

Kent Loader, Laboratory Supervisor

3-8-13 Date:

Page 1 of 1

Dry Creek WRF Laboratory For: TS & VS

Identification Reporting: No. WYSL - 22934

Permit No. WYG - <u>650002</u>

(Cheyenne BOPU) Dry Creek Water Reclamation Facility

Samples and Analytical

Quality Assurance/Quality Control OA/QC

Date: 7-9-13 | Time: 10:30 | [] AM [] PM

Analytical Sampling Records (Chevenne BOPU) Dry Creek WRF Laboratory

(0,1)

[] Dates and time of samples collected
[] Sampling location documented
[] Sampling types appropriate
[] Sampling volumes recorded
[] Name of person sampling
[] Types of sampling containers
[] Methods of preservation
[] Sampling quality assurance/ quality control QA/QC available
[] Pollutant limits red flagged if over mg/kg (Table 1,2,3,4 and Section 503.13) (Class A and B Biosolids)
[] Certification statement signed with each laboratory analytical report:
1. Pathogen reduction
2. Vector attraction reduction operates at Dry Creek WRF analysis samples. Results from daily sheets and results, recorded daily.
3. Management Practices
4. Site restrictions
[] Class A sludge: average temperature, (volatile solids percent) and total solids Dry sludge) once a month. Turn rows once a month, <u>weather permitting</u> .
[] Chain of custody recorded
Date: $7 - 9 - 13$ Time: $10:30$ [] AM [] PM

Analytical Records From: (Cheyenne BOPU) Dry Creek WRF To: (Cheyenne BOPU) Dry Creek WRF Laboratory

[] Date and time of samples analysis
[] Name of analyst
[] All analyses are reported on dry weight basis
[] Dry Creek WRF Laboratory 8911 Campstool Rd. Cheyenne, WY 82007 Ph: 307-635-3163 Fax: 307-635-6833
[] Analytical quality assurance/quality control (QA/QC) available
[] Analytical results available
[] Chain of custody record

Analytical Records From: (Cheyenne BOPU) Dry Creek WRF To: (Cheyenne BOPU) Dry Creek WRF Laboratory

[]	Date and time of sample
	Name of analyst
	Analytical methods used
[]	Analyses and calculation results properly documented or verified
[]	All analysis are reported on dry weight basis with the exception of volatile solids or total solids in percent. (1quart plastic bag 450 grams) (7 quart plastic bags 3150 grams).
[]	Volatile solids and total solids samples need to be analyzed six times a year for Class B Biosolids and 12 times a year for Class A Biosolids.
[]	Analytical quality assurance/quality control (QA/QC) available
[]	Analytical results available
	Chain of custody record

Zone: C Rows: 1 - 7 Date: 7 - 9 - 13 Time: 10 - 30 [] AMV[] PM

Analytical Sample Containers From: (Cheyenne BOPU) Dry Creek WRF To: (Cheyenne BOPU) Dry Creek WRF Laboratory

Dry Sludge for fecal results in MPN, and percent solids for Class A or Class B Biosolids. 1 quart Plastic bags 450 grams: 7 Quart Plastic bags total of 3150 grams. Fecal samples and results are analyzed at the Dry Creek WRF Laboratory in with six hours of the holding time. The results of fecal samples in (MPN) and (percent solids) need to be analyzed in, *February, April, June, August, October, and December. **January, March, May, July, September and November; test for TS and VS. Class A test for Helminth ova density limits > 1 egg/4g TS; Enteric virus density limits of > 1 PFU/4g

- 1. *' **Class A sludge < 1000 MPN/gram. (Test 12 times a year for TS and VS).
- 2. * Class B sludge < 2,000,000 MPN/gram
- 3. Percent solids, 75 % or better for Class A Biosolids and Class B Biosolids.
- 4. Chain of custody record

Zone: C Rows: 1 - 1 Date: 7 - 9 - 13 Time: 10/30 [] AM [] PM

Project Name: 6,060 1,69
Location: Dry Creek WRF.
Address: 8911 Campstoul Pd.
City: Cheyenne State: 4 Zip Code: 82007.
City: Cheyenne State: 4 Zip Code: 82007. Samples Collected by: Chet Backett. [Date/Time: 7-9-13/10:30 Am
Analytical Certification
This certification must be completed by the Analytical Laboratory performing service for the Cheyenne Board of Public Utilities and submitted with each "Analytical Report.
"I certify that these analysis and resulting report (s) were prepared under my direction and supervision in accordance with a system designed to assure that qualified personal properly analyze all samples and accurately report the results. I certify that all analysis were performed in accordance with method approved for wastewater under the latest revision to 40 CFR Part 503 Sludge Regulation. Based on my inquiry of the person or persons who manage the system, or those person directly responsible for analyzing, the wastewater samples and generating the report (s), the analysis, report, and information submitted is to the best on my knowledge and belief, true, accurate, and completed."
Name of Laboratory: Dry Greek WR/
Address: 8911 Cumps Toul Rd.
City: Cheyenne State: My Zip Code: 8200].
Name of Analyst: Kent Back.
This Certification is signed by:
Date: 10.29.13 Time: 8 JAM [] PM



Chain of Custody and Analytical Request Record PLEASE PRINT CLEARLY, provide as much information as possible

Page	1	of X
<u> </u>		

Client's Name⊕ry Cyesk with Contact Name: det Brukel Sampler's Name (if other than Contact):														
Report Required For:	050	1,14		Number of Containers	ANA	LYS 	IS RE	QUE	ST		How Preserved	Sample <u>Type</u>	Other Information	Analysis Completed
Report Required For: 13:0501,15				Sample Type A W S V B O Air <u>W</u> ater <u>S</u> oils/ <u>S</u> olids <u>V</u> egetation <u>B</u> ioassay					·	,	HNO₃ H₂SO₄	Grab or Composite	(pH, Field Analysis, etc.)	Yes / No (Lab use only)
SAMPLE IDENTIFICATI (Name, Location, etc.)	ON	Collection Date	Collection Time	<u>O</u> ther MATRIX		7							·	
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Signed Sample Dis		Return to					posal:_	مور س	garanter .		/ * O & K	<u>, , , , , , , , , , , , , , , , , , , </u>	Log#	725

Copies to:

White - Book in Laboratory

Yellow - Laboratory Hard Copy

Pink - Client

Attachment: #4. Dry Creek Water Reclamation Facility

F. Pathogen reduction is accomplished through anaerobic digestion. The primary and secondary digested sludge is treated in the absence of air for mean cell residence time and temperature between 25 and 35 days at 92 to 100 degrees Fahrenheit. Air dried sludge is obtained with a tractor aerator on paved drying beds and on site unpaved storage area in windrows that are turned approximately once a month dependant on the weather conditions.

The Biosolids production (dry weight) at the Dry Creek WRF is over 1500 metric tons a year. Therefore samples are collected six times a year (February, April, May, June, August, October, and December). The laboratories analyze the dry samples for metals, nutrients, organics pathogens, volatile solids and total solids.

CERTIFICATION STATEMENT

I certify under the penalty of law, that the pathogen requirements in Part I.C.3, the management practices in Part I.D (if necessary) (including the practice in part I. D.13 if the table 4 annual pollutant limits are used) and the site restrictions in Part I.C.2 (if necessary) have been met. This determination has been made under my direction and supervision in accordance with the system designed to assure that qualified personnel properly gather and evaluate the information used to determine that pathogen requirements, the vector attraction reduction requirements, the management practices and the site restrictions have been met. I aware that there are significant penalties for certification including the possibility of imprisonment.

Signature

Jim Hughes, Manager

Water Reclamation Division

Attachment: #5. Dry Creek Water Reclamation Facility

G. Vector attraction reduction requirements are met through anaerobic digestion when there is thirty eight percent or more reduction in volatile solids. Volatile solids destruction is measured weight by volume average ((Vol. Solids Reduction = VS in - VS out / (VS in - ((VS in * VS out)) (Use Average). The sludge is also air dried in windrows for further vector attraction reduction. The dry solids in windrows are between 65% to 80% total volatile solids reduction before land application.

RE: Flows From: Primary North and Primary South Raw sludge Average: Total solids (change % to Mg/l (10000) (NRS & SRS): Total Vol Solids (NRS & SRS): Total C-2 (wasting) cake flow gal: C-1 (digested) Solids (mg/L) cake: C-1 Vol solids cake (mg/L): C-2 solids cake (mg/L): C-2 Vol Solids cake (mg/L) Cake flow from Rotary Drum Thicker to digester.

CERTIFICATION STATEMENT

I certify under the penalty of law, that the pathogen requirements in Part I.C.2, one of the vector attraction alternatives in Part I.C.3, reduction the management in part I.D (if (including practices necessary) practices in Part I.D.13 if the table 4 annual pollutant limits are used) and the site restrictions in part I.C.2 (if necessary) have been met. This determination has been made under my direction and supervision in accordance with information used to determine that the requirements, the vector attraction reduction requirements, the management practices and the site restrictions have been met. I am aware that there are significant penalties for false certification including the possibility imprisonment.

Signature

Jim Hughes, Manager

Water Reclamation Division

Attachment: #6. Dry Creek Water Reclamation Facility

H. Best management practices are accomplished by applying biosolids at a whole sludge application rate that is less than or equal to the agronomic rate for the specific site and plant species. The Biosolids are applied so that it does not adversely affect a threatened or endangered species.

Biosolids are not dispersed on sites that are flooded or snow covered, frozen ground with a slope of three percent or more to prevent run off into wetland or surface water. A buffer zone of thirty-five feet from waterways, stock wells, and surface water is observed. Biosolids land applications are prohibited to sites where the available phosphorous content of the existing soil exceeds 400 pounds per acre.

Stored Biosolids on the plant facility remain in windrows for two years or less. The Biosolids are land applied in the winter, spring and fall of the year, weather permitting. Biosolids and soil are analytically tested before disposal. Cheyenne's sludge management practice ensures compliance with both Federal and State parameters and provides for long term Biosolids procedures with little or no detriment to the environment, while enhancing the native grass and field crop production of those participating ranchers and farmers who utilize Biosolids as a fertilizer supplement and soil conditioner.

CERTIFICATION STATEMENT

I certify under the penalty of law that the pathogen requirements in Part I.C.2, one of the vector attraction reduction alternatives in Part I.C.3, the management practices in part I.D (if necessary) (including in the practices in Part I.D.13 if the table 4 annual pollutant limits are used) and the site restrictions in Part I.C.2 (if necessary) have been met. This determination has been made under my direction and supervision in accordance with the system designed to assure that qualified personal properly gather and evaluate the information used to determine that the pathogen requirements, the management practices and the site restrictions have been met. I am aware that there are significant penalties for false certification including the possibility of imprisonment.

Signature

Jim Hughes, Manager

Water Reclamation Division Attachment: #7.

Dry Creek Water Reclamation Facility

I. Site restrictions are first achieved through the quality of sewage sludge product which has been stabilized to reduce pathogenic organisms, which has been dried to a solids concentration of sixty percentile or greater and contains no hazardous or toxic compounds or chemicals in concentrations which exceed those authorized by the USA EPA REGION VIII and WYOMING DEQ for land application in Part C.1, Specific Limitations and Self Monitoring Requirements and Chemical Pollutant Limitations.

The dry sludge that is produced is class A and B which are applied primarily to range land. Before applying sewage sludge on rangeland, pastureland, farm land, or fields, soil samples have been collected and have had the appropriate soil analysis conducted.

The <u>Class B</u> Sludge with respect to pathogens has been in compliance with the entire site restrictions listed in Part I.C.2. No sludge or material derived from sludge exceeds the limits in Table 3 Part I.C.1. The <u>Class A</u> pathogen reduction limits in Part I.C.2 meets the first 4 vector attraction reduction alternatives in Part I.C.3. There are sufficient management practices used to prevent malfunctions and deterioration, operator errors and discharges which may cause or lead to the release of sludge to the environment, a threat to human health or a nuisance.

CERTIFICATION STATEMENT

I certify under the penalty of law, that the pathogen requirements in Part I.C.2, one of the vector attraction reduction alternatives in Part I.C.3, the management practices in Part I.D (if necessary) including the practice in Part I.D.13 if the table 4 annual pollutant limits are used) and the site restrictions in Part I.C.2 (if necessary) have been met. This determination has been made under my direction and supervision in accordance with the system designed to assure that qualified personnel properly gather and evaluate the information used to determine that the pathogen requirements, the vector attractions reduction requirements, the management practices and the restrictions have been met. I am aware that there are significant penalties for false certification including the possibility of imprisonment.

Signature |

Sigmature \(\)
Jim(\)
Hughes, Manager



ANALYTICAL RESULTS

DRY CREEK WWTP LABORATORY

Cheyenne BOPU 8911 Campstool Road Cheyenne, Wyoming 82007 Phone: 307-635-3163

Fax: 307-635-6833

Date Sampled: 07/09/13

Date Received: 07/09/13 Sample Location: Zone A

Sample Matrix: Compost

Sampled By: CB

Date Reported: 08/07/13 Date Fecal Analyzed: NA

Date Solids Analyzed: 07/11/13

Analyst(s): mw

EPA Method/Total Solids:

SM 19th Ed 2540B

EPA Method/Volatile Solids: SM 19th Ed 2540E

EPA Method/Fecal Coliform: SM 18th Ed 9221E (A-1 Media)

Fecal Coliform/

Row #	Total Solids %	Volatile Solids%	Dry Gram Sludge
1	90.0	24.8	NA
2	88.2	26.3	NA ·
3	86.8	30.4	NA
4	85.9	55.9	NA
5	85.6	38.6	NA
6	75.2	47.8	NA
7	85.3	39.8	NA
8	89.4	53.6	NA
9	86.4	61.4	NA

Comments:

All data meets QA/QC requirements; please see QA/QC files in Dry Creek Laboratory.

NA = Not Analyzed

Kent Loader, Laboratory Supervisor

Dry Creek WRF Laboratory For: TS & VS

Identification Reporting: No. WYSL - 22934

Permit No. WYG - <u>650002</u>

(Cheyenne BOPU) Dry Creek Water Reclamation Facility

Samples and Analytical

Quality Assurance/Quality Control OA/QC

Date: 7-9-13 | Time: 10:30 | [] 4M[] PM

Analytical Sampling Records (Cheyenne BOPU) Dry Creek WRF Laboratory

[] Dates and time of samples collected
[] Sampling location documented
[] Sampling types appropriate
[] Sampling volumes recorded
[] Name of person sampling
[] Types of sampling containers
[] Methods of preservation
[] Sampling quality assurance/ quality control QA/QC available
[] Pollutant limits red flagged if over mg/kg (Table 1,2,3,4 and Section 503.13) (Class A and B Biosolids)
[] Certification statement signed with each laboratory analytical report:
1. Pathogen reduction
2. Vector attraction reduction operates at Dry Creek WRF analysis samples. Results from daily sheets and results, recorded daily.
3. Management Practices
4. Site restrictions
[] Class A sludge: average temperature, (volatile solids percent) and total solids Dry sludge) once a month. Turn rows once a month, <u>weather permitting</u> .
[] Chain of custody recorded
Date: 7-9-13 Time: 10130 [] AM] PM

Analytical Records From: (Cheyenne BOPU) Dry Creek WRF To: (Cheyenne BOPU) Dry Creek WRF Laboratory

[] Date and time of samples analysis
[] Name of analyst
[] All analyses are reported on dry weight basis
[] Dry Creek WRF Laboratory 8911 Campstool Rd. Cheyenne, WY 82007 Ph: 307-635-3163 Fax: 307-635-6833
[] Analytical quality assurance/quality control (QA/QC) available
[] Analytical results available
[] Chain of custody record
•

Date: 7-9-1.3 | Time: 10130 | [] AM [] PM

Analytical Records From: (Cheyenne BOPU) Dry Creek WRF To: (Cheyenne BOPU) Dry Creek WRF Laboratory

	Date and time of sample
[] N	Name of analyst
[] A	Analytical methods used
[] A	analyses and calculation results properly documented or verified
0	All analysis are reported on dry weight basis with the exception of volatile solids or total solids in percent. (1quart plastic bag 450 grams) (7 quart plastic bags 3150 grams).
	Volatile solids and total solids samples need to be analyzed six times a year for Class B Biosolids and 12 times a year for Class A Biosolids.
[] A	Analytical quality assurance/quality control (QA/QC) available
[] A	analytical results available
[] (Chain of custody record

Zone: A Rows: 1 - 9 Date: 7 - 9 - 13 Time: 0.130 [] AM [] PM

Analytical Sample Containers From: (Cheyenne BOPU) Dry Creek WRF To: (Cheyenne BOPU) Dry Creek WRF Laboratory

Dry Sludge for fecal results in MPN, and percent solids for Class A or Class B Biosolids. 1 quart Plastic bags 450 grams: 7 Quart Plastic bags total of 3150 grams. Fecal samples and results are analyzed at the Dry Creek WRF Laboratory in with six hours of the holding time. The results of fecal samples in (MPN) and (percent solids) need to be analyzed in, *February, April, June, August, October, and December. **January, March, May, July, September and November; test for TS and VS. Class A test for Helminth ova density limits > 1 egg/4g TS; Enteric virus density limits of > 1 PFU/4g

- 1. *' **Class A sludge < 1000 MPN/gram. (Test 12 times a year for TS and VS).
- 2. * Class B sludge < 2,000,000 MPN/gram
- 3. Percent solids, 75 % or better for Class A Biosolids and Class B Biosolids.
- 4. Chain of custody record

Zone: $\boxed{+}$ Rows: $\boxed{-9}$ Date: $\boxed{7-9-13}$ Time: $\boxed{0.30}$ [] AM [] PM

Project Name: B / 0.50 1: 15
Location: Dry Creek WRF.
Address: 8911 Camp 3 +001 Rd.
City: Cheyenne State: Ly Zip Code: 82007.
City: Cheyenne State: Zip Code: 82007. Samples Collected by: Chet Bashell. [Date/Time: 79-13/10130 Am
Analytical Certification
This certification must be completed by the Analytical Laboratory performing service for the Cheyenne Board of Public Utilities and submitted with each "Analytical Report.
"I certify that these analysis and resulting report (s) were prepared under my direction and supervision in accordance with a system designed to assure that qualified personal properly analyze all samples and accurately report the results. I certify that all analysis were performed in accordance with method approved for wastewater under the latest revision to 40 CFR Part 503 Sludge Regulation. Based on my inquiry of the person or persons who manage the system, or those person directly responsible for analyzing, the wastewater samples and generating the report (s), the analysis, report, and information submitted is to the best on my knowledge and belief, true, accurate, and completed."
Name of Laboratory: Nry Greek WRF.
Address: 8911 Camps Tool RJ.
City: Cheyenne State: My Zip Code & Loo7.
Name of Analyst: feut Locate.
This Certification is signed by:
Date: 10.29./3 Time: 8 AM [] PM



Chain of Custody and Analytical Request Record
PLEASE PRINT CLEARLY, provide as much information as possible

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Page	1	of	\rightarrow
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Client's Name (if other than Contact Name:														
Report Required For:					Number of Containers Sample Type	ANA	LYSI	S RE	QUES'	1	How <u>Preserved</u>	Sample <u>Type</u>	Other <u>Information</u>	Analysis Completed
ROWS 1-7				AWSVBO Air <u>W</u> ater <u>S</u> oils/ <u>S</u> olids <u>V</u> egetation <u>B</u> ioassay	المحمد م	<u> </u>				HNO3 H2SO4 4°C HCL None	Grab or Composite	(pH, Field Analysis, etc.)	Yes / No (Lab use only)	
SAMPLE IDEN (Name, Loca			Collection Date	Time	<u>O</u> ther MATRIX	 -	7							
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4	Control of the Control													
5		2												
6		6												
7	1	- 7	1	1.		V,	1				1	V		
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Signed		Disposal:	Return	to client:			b dispo	, A			7		Log#	12.3

Copies to:

White - Book in Laboratory

Yellow - Laboratory Hard Copy

Pink - Client





Cheyenne Board of Public Utilities Water Reclamation Laboratory

Chain of Custody and Analytical Request Record PLEASE PRINT CLEARLY, provide as much information as possible

Page of ____

Client's Name:	<u>₩</u> Contact Name:		Sampler's Nam	ne (if other than Contact):_	
Report Required For:		Number of ANALYSIS	REQUESTED How Sa	mple Other	Analysis
Biowlilb June H Rows		Containers	Preserved T	ype <u>Information</u>	Completed
<i>1514214</i> 9	0 01	Sample Type			
- HAROWS	8 - 1	AWSVBO	HNO ₃ G	Grab (pH, Field Analysis,	Yes / No
- UNCH	/	Air Water		or etc.)	(Lab use only)
		Soils/Solids Yegetation		nposite	*
		Bioassay	HCL None		
SAMPLE IDENTIFICATION	Collection Collection	Other /			
(Name, Location, etc.)	Date Time	MATRIX			
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4	Y				
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7					
Relinquished by:	• • • • • • • • • • • • • • • • • • •	Date/Time:	Received by:		Date/Time:,
Custody Record	1 1 N	7-4-13			Date/Time:
MUST be	1 Souburt	Date/Time: 7-4-13	JA Commission		11/0000
Signed Sample Disposal:	Return to client:	Lab dispo		Log#	724

Copies to:

White - Book in Laboratory

Yellow - Laboratory Hard Copy

Pink - Client

Attachment: #4. Dry Creek Water Reclamation Facility

F. Pathogen reduction is accomplished through anaerobic digestion. The primary and secondary digested sludge is treated in the absence of air for mean cell residence time and temperature between 25 and 35 days at 92 to 100 degrees Fahrenheit. Air dried sludge is obtained with a tractor aerator on paved drying beds and on site unpaved storage area in windrows that are turned approximately once a month dependant on the weather conditions.

The Biosolids production (dry weight) at the Dry Creek WRF is over 1500 metric tons a year. Therefore samples are collected six times a year (February, April, May, June, August, October, and December). The laboratories analyze the dry samples for metals, nutrients, organics pathogens, volatile solids and total solids.

CERTIFICATION STATEMENT

I certify under the penalty of law, that the pathogen requirements in Part I.C.3, the management practices in Part I.D (if necessary) (including the practice in part I.D.13 if the table 4 annual pollutant limits are used) and the site restrictions in Part I.C.2 (if necessary) have been met. This determination has been made under my direction and supervision in accordance with the system designed to assure that qualified personnel properly gather and evaluate the information used to determine that pathogen requirements, the vector attraction reduction requirements, the management practices and the site restrictions have been met. I am aware that there are significant penalties for false certification including the possibility of imprisonment.

Signature

Jim Wughes, Manager

Water Reclamation Division

Attachment: #5. Dry Creek Water Reclamation Facility

G. Vector attraction reduction requirements are met through anaerobic digestion when there is thirty eight percent or more reduction in volatile solids. Volatile solids destruction is measured weight by volume average ((Vol. Solids Reduction = VS in - VS out / (VS in -((VS in * VS out)) (Use Average). The sludge is also air dried in windrows for further vector attraction reduction. The dry solids in windrows are between 65% to 80% total volatile solids reduction before land application.

RE: Flows From: Primary North and Primary South Raw sludge Average: Total solids (change % to Mg/l (10000) (NRS & SRS): Total Vol Solids (NRS & SRS): Total C-2 (wasting) cake flow gal: C-1 (digested) Solids (mg/L) cake: C-1 Vol solids cake (mg/L): C-2 solids cake (mg/L): C-2 Vol Solids cake (mg/L) Cake flow from Rotary Drum Thicker to digester.

CERTIFICATION STATEMENT

I certify under the penalty of law, that the pathogen requirements in Part I.C.2, one of the vector attraction alternatives I.C.3, reduction in Part the management practices in part I.D (if necessary) (including practices in Part I.D.13 if the table 4 annual pollutant limits are used) and the site restrictions in part I.C.2 (if necessary) have been met. This determination has been made under my direction and supervision in accordance with the information used to determine that requirements, the vector attraction reduction requirements, the management practices and the site restrictions have been met. I am aware that there are significant penalties for false certification including the possibility imprisonment.

Signature

Jim Hughes, Manager

Water Reclamation Division

Attachment: #6. Dry Creek Water Reclamation Facility

H. Best management practices are accomplished by applying biosolids at a whole sludge application rate that is less than or equal to the agronomic rate for the specific site and plant species. The Biosolids are applied so that it does not adversely affect a threatened or endangered species.

Biosolids are not dispersed on sites that are flooded or snow covered, frozen ground with a slope of three percent or more to prevent run off into wetland or surface water. A buffer zone of thirty-five feet from waterways, stock wells, and surface water is observed. Biosolids land applications are prohibited to sites where the available phosphorous content of the existing soil exceeds 400 pounds per acre.

Stored Biosolids on the plant facility remain in windrows for two years or less. The Biosolids are land applied in the winter, spring and fall of the year, weather permitting. Biosolids and soil are analytically tested before disposal. Cheyenne's sludge management practice ensures compliance with both Federal and State parameters and provides for long term Biosolids procedures with little or no detriment to the environment, while enhancing the native grass and field crop production of those participating ranchers and farmers who utilize Biosolids as a fertilizer supplement and soil conditioner.

CERTIFICATION STATEMENT

I certify under the penalty of law that the pathogen requirements in Part I.C.2, one of the vector attraction reduction alternatives in Part I.C.3, the management practices in part I.D (if necessary) (including in the practices in Part I.D.13 if the table 4 annual pollutant limits are used) and the site restrictions in Part I.C.2 (if necessary) have been met. This determination has been made under my direction and supervision in accordance with the system designed to assure that qualified personal properly gather and evaluate the information used to determine that the pathogen requirements, the management practices and the site restrictions have been met. I am aware that there are significant penalties for false certification including the possibility of imprisonment.

Signature

Jim Hughes, Manager

Water Reclamation Division Attachment: #7.

Dry Creek Water Reclamation Facility

I. Site restrictions are first achieved through the quality of sewage sludge product which has been stabilized to reduce pathogenic organisms, which has been dried to a solids concentration of sixty percentile or greater and contains no hazardous or toxic compounds or chemicals in concentrations which exceed those authorized by the USA EPA REGION VIII and WYOMING DEQ for land application in Part C.1, Specific Limitations and Self Monitoring Requirements and Chemical Pollutant Limitations.

The dry sludge that is produced is class \underline{A} and \underline{B} which are applied primarily to range land. Before applying sewage sludge on rangeland, pastureland, farm land, or fields, soil samples have been collected and have had the appropriate soil analysis conducted.

The <u>Class B</u> Sludge with respect to pathogens has been in compliance with the entire site restrictions listed in Part I.C.2. No sludge or material derived from sludge exceeds the limits in Table 3 Part I.C.1. The <u>Class A</u> pathogen reduction limits in Part I.C.2 meets the first 4 vector attraction reduction alternatives in Part I.C.3. There are sufficient management practices used to prevent malfunctions and deterioration, operator errors and discharges which may cause or lead to the release of sludge to the environment, a threat to human health or a nuisance.

CERTIFICATION STATEMENT

I certify under the penalty of law, that the pathogen requirements in Part I.C.2, one of the vector attraction alternatives in Part I.C.3, the management practices in Part I.D (if necessary) including the practice in Part I.D.13 if the table 4 annual pollutant limits are used) and the site restrictions in Part I.C.2 (if necessary) have been met. This determination has been made under my direction and supervision in accordance with the system designed to assure that qualified personnel properly gather and evaluate the information used to determine that the pathogen requirements, the vector attractions reduction practices requirements, the management and the restrictions have been met. I am aware that there are significant penalties for false certification including the possibility of imprisonment.

Signature J Jim Hughes, Manager



ANALYTICAL RESULTS

DRY CREEK WWTP LABORATORY

Cheyenne BOPU 8911 Campstool Road Cheyenne, Wyoming 82007 Phone: 307-635-3163 Fax: 307-635-6833

Date Sampled: 05/14/13

Date Received: 05/14/13 Sample Location: Zone E

Sample Matrix: Compost

Sampled By: CB

Date Reported: 06/07/13 Date Fecal Analyzed: NA

Date Solids Analyzed: 05/15/13

Analyst(s): mw

EPA Method/Total Solids:

SM 19th Ed 2540B

EPA Method/Volatile Solids: SM 19th Ed 2540E EPA Method/Fecal Coliform: SM 18th Ed 9221E (A-1 Media)

Fecal Coliform/

Row #	Total Solids %	Volatile Solids%	Dry Gram Sludge
1	84.4	42.7	NA
2	86.5	39.5	- NA
3	85.6	45.4	NA ·
4	83.3	47.0	NA
5	88.7	39.6	NA
6	78.6	42.4	NA
7	87.8	39.7	NA
8	86.6	42.4	NA
9	86.7	46.7	NA

Comments:

All data meets QA/QC requirements; please see QA/QC files in Dry Creek Laboratory. NA = Not Analyzed

Kent Loader, Laboratory Supervisor

Dry Creek WRF Laboratory For: TS & VS

Identification Reporting: No. WYSL - 22934

Permit No. WYG - <u>650002</u>

(Cheyenne BOPU) Dry Creek Water Reclamation Facility

Samples and Analytical

Quality Assurance/Quality Control OA/QC

Date: 5-14-13 | Time: 9:35 | [] AM J] PM

Analytical Sampling Records (Cheyenne BOPU) Dry Creek WRF Laboratory

[] Dates and time of samples collected
[] Sampling location documented
[] Sampling types appropriate
[] Sampling volumes recorded
[] Name of person sampling
[] Types of sampling containers
[] Methods of preservation
[] Sampling quality assurance/ quality control QA/QC available
[] Pollutant limits red flagged if over mg/kg (Table 1,2,3,4 and Section 503.13) (Class A and B Biosolids)
[] Certification statement signed with each laboratory analytical report:
1. Pathogen reduction
2. Vector attraction reduction operates at Dry Creek WRF analysis samples. Results from daily sheets and results, recorded daily.
3. Management Practices
4. Site restrictions
[] Class A sludge: average temperature, (volatile solids percent) and total solids Dry sludge) once a month. Turn rows once a month, <u>weather permitting</u> .
[] Chain of custody recorded
Date: 5-14-13 Time: 9:35 [[AM [] PM

Analytical Records From: (Cheyenne BOPU) Dry Creek WRF To: (Cheyenne BOPU) Dry Creek WRF Laboratory

[] Date and time of samples analysis	
[] Name of analyst	
[] All analyses are reported on dry weight basis	
[] Dry Creek WRF Laboratory 8911 Campstool Rd. Cheyenne, WY 82007 Ph: 307-635-3163 Fax: 307-635-6833	
[] Analytical quality assurance/quality control (QA/QC) available	
[] Analytical results available	
[] Chain of custody record	

Date: $6 - \frac{13}{13}$ | Time: 9:35- | [] AM] PM

Analytical Records From: (Cheyenne BOPU) Dry Creek WRF To: (Cheyenne BOPU) Dry Creek WRF Laboratory

Date and time of sample
] Name of analyst
] Analytical methods used
Analyses and calculation results properly documented or verified
All analysis are reported on dry weight basis with the exception of volatile solid or total solids in percent. (1quart plastic bag 450 grams) (7 quart plastic bags 3150 grams).
Volatile solids and total solids samples need to be analyzed six times a year for Class B Biosolids and 12 times a year for Class A Biosolids.
] Analytical quality assurance/quality control (QA/QC) available
] Analytical results available
Chain of custody record

Zone: F Rows: 1 - 9 Date: 5 - 14 - 13 Time: $9 \cdot 135$ [] AM/[] PM

Analytical Sample Containers From: (Cheyenne BOPU) Dry Creek WRF To: (Cheyenne BOPU) Dry Creek WRF Laboratory

Dry Sludge for fecal results in MPN, and percent solids for Class A or Class B Biosolids. 1 quart Plastic bags 450 grams: 7 Quart Plastic bags total of 3150 grams. Fecal samples and results are analyzed at the Dry Creek WRF Laboratory in with six hours of the holding time. The results of fecal samples in (MPN) and (percent solids) need to be analyzed in, *February, April, June, August, October, and December. **January, March, May, July, September and November; test for TS and VS. Class A test for Helminth ova density limits > 1 egg/4g TS; Enteric virus density limits of > 1 PFU/4g

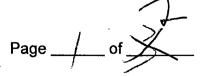
- 1. *' **Class A sludge < 1000 MPN/gram. (Test 12 times a year for TS and VS).
- 2. * Class B sludge < 2,000,000 MPN/gram
- 3. Percent solids, 75 % or better for Class A Biosolids and Class B Biosolids.
- 4. Chain of custody record

Zone: E Rows: 1 - 9 Date: 5 - 14 - 135 Time: $9 \cdot 135$ [] AM [] PM

Project Name: B 1050 1, 65
Location: Dry Creek WAF.
Address: 89/1 Campstal Rd.
City: Cheyerne State: [Y] Zip Code: 7207.
Address: 89/1 Camp Starl Rd City: Cheyerne State: [y] Zip Code: 72007. Samples Collected by: Chat Backy Date/Time: 5-14-13/9/35/An
Analytical Certification
This certification must be completed by the Analytical Laboratory performing service for the Cheyenne Board of Public Utilities and submitted with each "Analytical Report.
"I certify that these analysis and resulting report (s) were prepared under my direction and supervision in accordance with a system designed to assure that qualified personal properly analyze all samples and accurately report the results. I certify that all analysis were performed in accordance with method approved for wastewater under the latest revision to 40 CFR Part 503 Sludge Regulation. Based on my inquiry of the person or persons who manage the system, or those person directly responsible for analyzing, the wastewater samples and generating the report (s), the analysis, report, and information submitted is to the best on my knowledge and belief, true, accurate, and completed."
Name of Laboratory: Dry Creek WRF
Name of Laboratory: Dry Creek WIF. Address: 8911 Cam 95 Tool Rd .
City: Cheyenne State: Wy Zip Code: 8200 /
Name of Analyst:
This Certification is signed by:
Date: (0-28-13] Time: (/] XAM [] PM



Chain of Custody and Analytical Request Record PLEASE PRINT CLEARLY, provide as much information as possible



Client's Name: ∭ ∨ ∨ Ć ✓	POK L	RE Conta	ct Name:_/	1.11	B	udel		Sampler's I	Name (if o	ther than Contact):_	
Report Required For:				Number of	ANALY	SIS REQU	ESTED	How	Sample	Other	Analysis
Nº 20126			Containers Sample Type A W S V B O Air Water Soils/Solids Yegetation Bioassay				HNO₃ H₂SO₄ 4°C HCL None	<u>Type</u> Grab or Composite	Information (pH, Field Analysis, etc.)	Completed Yes / No (Lab use only)	
SAMPLE IDENTIFIC (Name, Location, e		Collection Date	Collection Time	Other MATRIX				A		•	,
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Copies to:

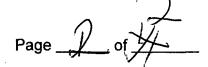
White - Book in Laboratory

Yellow - Laboratory Hard Copy

Pink - Client



Chain of Custody and Analytical Request Record
PLEASE PRINT CLEARLY, provide as much information as possible



Client's Name:	ICVERK	Likcont	act Name:_	Mut		1/2	A.	b	N)		Sampler's I	Name (if o	ther than Contact):_	
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720m 0	115 E ROWS	- 1	1	Soils/Solids							H₂SO₄ 4°C	or Carranaita	etc.)	(Lab use only)
				Vegetation	1		-		-		HCL	Composite		
		<u></u>		<u>B</u> ioassay					ļ		None			
SAMPLE IDEN		Collection Date	Collection Time	<u>O</u> ther	$ \mathcal{M} $	\Im								
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Copies to:

White - Book in Laboratory

Yellow - Laboratory Hard Copy

Pink - Client

Attachment: #4. Dry Creek Water Reclamation Facility

F. Pathogen reduction is accomplished through anaerobic digestion. The primary and secondary digested sludge is treated in the absence of air for mean cell residence time and temperature between 25 and 35 days at 92 to 100 degrees Fahrenheit. Air dried sludge is obtained with a tractor aerator on paved drying beds and on site unpaved storage area in windrows that are turned approximately once a month dependant on the weather conditions.

The Biosolids production (dry weight) at the Dry Creek WRF is over 1500 metric tons a year. Therefore samples are collected six times a year (February, April, May, June, August, October, and December). The laboratories analyze the dry samples for metals, nutrients, organics pathogens, volatile solids and total solids.

CERTIFICATION STATEMENT

I certify under the penalty of law, that the pathogen requirements in Part I.C.3, the management practices in Part I.D (if necessary) (including the practice in part I.D.13 if the table 4 annual pollutant limits are used) and the site restrictions in Part I.C.2 (if necessary) have been met. This determination has been made under my direction and supervision in accordance with the system designed to assure that qualified personnel properly gather and evaluate the information used to determine that pathogen requirements, the vector attraction reduction requirements, the management practices and the site restrictions have been met. I am aware that there are significant penalties for false certification including the possibility of imprisonment.

Signature

Jim Hughes, Manager

Water Reclamation Division

Attachment: #5. Dry Creek Water Reclamation Facility

G. Vector attraction reduction requirements are met through anaerobic digestion when there is thirty eight percent or more reduction in volatile solids. Volatile solids destruction is measured weight by volume average ((Vol. Solids Reduction = VS in - VS out / (VS in -((VS in * VS out)) (Use Average). The sludge is also air dried in windrows for further vector attraction reduction. The dry solids in windrows are between 65% to 80% total volatile solids reduction before land application.

RE: Flows From: Primary North and Primary South Raw sludge Average: Total solids (change % to Mg/l (10000) (NRS & SRS): Total Vol Solids (NRS & SRS): Total C-2 (wasting) cake flow gal: C-1 (digested) Solids (mg/L) cake: C-1 Vol solids cake (mg/L): C-2 solids cake (mg/L): C-2 Vol Solids cake (mg/L) Cake flow from Rotary Drum Thicker to digester.

CERTIFICATION STATEMENT

I certify under the penalty of law, that the pathogen requirements in Part I.C.2, one of the vector attraction in Part I.C.3, alternatives the management I.D (if necessary) (including practices in part practices in Part I.D.13 if the table 4 annual pollutant limits are used) and the site restrictions in part I.C.2 (if necessary) have been met. This determination has been made under my direction and supervision in accordance with information used to determine that the requirements, the vector attraction reduction requirements, the management practices and the site restrictions have been met. I am aware that there are significant penalties for false certification including the possibility imprisonment.

Signature

Jim Hughes, Manager

Water Reclamation Division

Attachment: #6. Dry Creek Water Reclamation Facility

H. Best management practices are accomplished by applying biosolids at a whole sludge application rate that is less than or equal to the agronomic rate for the specific site and plant species. The Biosolids are applied so that it does not adversely affect a threatened or endangered species.

Biosolids are not dispersed on sites that are flooded or snow covered, frozen ground with a slope of three percent or more to prevent run off into wetland or surface water. A buffer zone of thirty-five feet from waterways, stock wells, and surface water is observed. Biosolids land applications are prohibited to sites where the available phosphorous content of the existing soil exceeds 400 pounds per acre.

Stored Biosolids on the plant facility remain in windrows for two years or less. The Biosolids are land applied in the winter, spring and fall of the year, weather permitting. Biosolids and soil are analytically tested before disposal. Cheyenne's sludge management practice ensures compliance with both Federal and State parameters and provides for long term Biosolids procedures with little or no detriment to the environment, while enhancing the native grass and field crop production of those participating ranchers and farmers who utilize Biosolids as a fertilizer supplement and soil conditioner.

CERTIFICATION STATEMENT

I certify under the penalty of law that the pathogen requirements in Part I.C.2, one of the vector attraction reduction alternatives in Part I.C.3, the management practices in part I.D (if necessary) (including in the practices in Part I.D.13 if the table 4 annual pollutant limits are used) and the site restrictions in Part I.C.2 (if necessary) have been met. This determination has been made under my direction and supervision in accordance with the system designed to assure that qualified personal properly gather and evaluate the information used to determine that the pathogen requirements, the management practices and the site restrictions have been met. I am aware that there are significant penalties for false certification including the possibility of imprisonment.

Signature

Jim Hughes, Manager

Water Reclamation Division Attachment: #7.

Dry Creek Water Reclamation Facility

I. Site restrictions are first achieved through the quality of sewage sludge product which has been stabilized to reduce pathogenic organisms, which has been dried to a solids concentration of sixty percentile or greater and contains no hazardous or toxic compounds or chemicals in concentrations which exceed those authorized by the USA EPA REGION VIII and WYOMING DEQ for land application in Part C.1, Specific Limitations and Self Monitoring Requirements and Chemical Pollutant Limitations.

The dry sludge that is produced is class A and B which are applied primarily to range land. Before applying sewage sludge on rangeland, pastureland, farm land, or fields, soil samples have been collected and have had the appropriate soil analysis conducted.

The <u>Class B</u> Sludge with respect to pathogens has been in compliance with the entire site restrictions listed in Part I.C.2. No sludge or material derived from sludge exceeds the limits in Table 3 Part I.C.1. The <u>Class A</u> pathogen reduction limits in Part I.C.2 meets the first 4 vector attraction reduction alternatives in Part I.C.3. There are sufficient management practices used to prevent malfunctions and deterioration, operator errors and discharges which may cause or lead to the release of sludge to the environment, a threat to human health or a nuisance.

CERTIFICATION STATEMENT

I certify under the penalty of law, that the pathogen requirements in Part I.C.2, one of the vector attraction reduction alternatives in Part I.C.3, the management practices in Part I.D (if necessary) including the practice in Part I.D.13 if the table 4 annual pollutant limits are used) and the site restrictions in Part I.C.2 (if necessary) have been met. This determination has been made under my direction and supervision in accordance with the system designed to assure that qualified personnel properly gather and evaluate the information used to determine that the pathogen requirements, the vector attractions reduction requirements, the management practices and the restrictions have been met. I am aware that there are significant penalties for false certification including the possibility of imprisonment.

Signature Jim Hughes, Manager



ANALYTICAL RESULTS

DRY CREEK WWTP LABORATORY

Chevenne BOPU 8911 Campstool Road Cheyenne, Wyoming 82007 Phone: 307-635-3163 Fax: 307-635-6833

Date Sampled: 05/14/13

Date Received: 05/14/13 Sample Location: Zone D

Sample Matrix: Compost

Sampled By: CB

Date Reported: 06/07/13 Date Fecal Analyzed: NA

Date Solids Analyzed: 05/15/13

Analyst(s): mw

EPA Method/Total Solids:

SM 19th Ed 2540B

EPA Method/Volatile Solids: SM 19th Ed 2540E

EPA Method/Fecal Coliform: SM 18th Ed 9221E (A-1 Media)

Row#	Total Solids %	Volatile Solids%	Fecal Coliform/ Dry Gram Sludge
1	88.1	39.9	NA .
2	85.0	44.7	NA
3	83.0	44.5	NA
4	88.2	46.8	NA
5	85.9	47.1	NA

Comments:

All data meets QA/QC requirements; please see QA/QC files in Dry Creek Laboratory. NA = Not Analyzed

Kent Loader, Laboratory Supervisor

Page 1 of 1

Dry Creek WRF Laboratory For: TS & VS

Identification Reporting: No. WYSL - 22934

Permit No. WYG - <u>650002</u>

(Cheyenne BOPU) Dry Creek Water Reclamation Facility

Samples and Analytical

Quality Assurance/Quality Control OA/QC

Date: 5-14-13 | Time: 9135 | [AM [] PM

Analytical Sampling Records (Cheyenne BOPU) Dry Creek WRF Laboratory

[] Dates and time of samples collected
[] Sampling location documented
[] Sampling types appropriate
[] Sampling volumes recorded
[] Name of person sampling
[] Types of sampling containers
[] Methods of preservation
[] Sampling quality assurance/ quality control QA/QC available
[] Pollutant limits red flagged if over mg/kg (Table 1,2,3,4 and Section 503.13) (Class A and B Biosolids)
[] Certification statement signed with each laboratory analytical report:
1. Pathogen reduction
2. Vector attraction reduction operates at Dry Creek WRF analysis samples. Results from daily sheets and results, recorded daily.
3. Management Practices
4. Site restrictions
[] Class A sludge: average temperature, (volatile solids percent) and total solids Dry sludge) once a month. Turn rows once a month, <u>weather permitting</u> .
[] Chain of custody recorded
Date: 5-14-13 Time: 713.5 [] AM [] PM

Analytical Records From: (Cheyenne BOPU) Dry Creek WRF To: (Cheyenne BOPU) Dry Creek WRF Laboratory

[] Date and time of samples analysis
[] Name of analyst
[] All analyses are reported on dry weight basis
[] Dry Creek WRF Laboratory
8911 Campstool Rd.
Cheyenne, WY 82007
Ph: 307-635-3163
Fax: 307-635-6833
[] Analytical quality assurance/quality control (QA/QC) available
[] Analytical results available
[] Chain of custody record

Analytical Records From: (Cheyenne BOPU) Dry Creek WRF To: (Cheyenne BOPU) Dry Creek WRF Laboratory

[] Date and time of sample
[] Name of analyst
[] Analytical methods used
[] Analyses and calculation results properly documented or verified
[] All analysis are reported on dry weight basis with the exception of volatile solids or total solids in percent. (1quart plastic bag 450 grams) (7 quart plastic bags 3150 grams).
[] Volatile solids and total solids samples need to be analyzed six times a year for Class B Biosolids and 12 times a year for Class A Biosolids.
[] Analytical quality assurance/quality control (QA/QC) available
[] Analytical results available
[] Chain of custody record

Zone: | Rows: | -5 | Date: 5 - 14 - 13 | Time: 7:37 | AM | PM

Analytical Sample Containers From: (Cheyenne BOPU) Dry Creek WRF To: (Cheyenne BOPU) Dry Creek WRF Laboratory

Dry Sludge for fecal results in MPN, and percent solids for Class A or Class B Biosolids. 1 quart Plastic bags 450 grams: 7 Quart Plastic bags total of 3150 grams. Fecal samples and results are analyzed at the Dry Creek WRF Laboratory in with six hours of the holding time. The results of fecal samples in (MPN) and (percent solids) need to be analyzed in, *February, April, June, August, October, and December. **January, March, May, July, September and November; test for TS and VS. Class A test for Helminth ova density limits > 1 egg/4g TS; Enteric virus density limits of > 1 PFU/4g

- 1. *' **Class A sludge < 1000 MPN/gram. (Test 12 times a year for TS and VS).
- 2. * Class B sludge < 2,000,000 MPN/gram
- 3. Percent solids, 75 % or better for Class A Biosolids and Class B Biosolids.
- 4. Chain of custody record

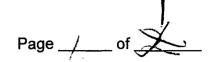
	5-14-1.5
Zone: <i>[]</i>] Rows:	Date: 1735 Time: 9 35 [] AM [] PM

c 12.

Project Name: B1050/id 5
Location: Dy Creek WRF.
Address: 89/1 Cam 15 Tool Rd.
City: Cheyenne State: Wy Zip Code: 8207. Samples Collected by: Che Ball (Date/Time: 5-14-13/935 h)
Analytical Certification
This certification must be completed by the Analytical Laboratory performing service for the Cheyenne Board of Public Utilities and submitted with each "Analytical Report.
"I certify that these analysis and resulting report (s) were prepared under my direction and supervision in accordance with a system designed to assure that qualified personal properly analyze all samples and accurately report the results. I certify that all analysis were performed in accordance with method approved for wastewater under the latest revision to 40 CFR Part 503 Sludge Regulation. Based on my inquiry of the person or persons who manage the system, or those person directly responsible for analyzing, the wastewater samples and generating the report (s), the analysis, report, and information submitted is to the best on my knowledge and belief, true, accurate, and completed."
Name of Laboratory: Dry Creek WRF.
Name of Laboratory: Dry Creek WRF. Address: 8111 Campstul Rd.
City: Cheyenne State: V/ Zip Code: 82007.
Name of Analyst:
This Certification is signed by:
Date: 6-28 /3 Time:



Chain of Custody and Analytical Request Record
PLEASE PRINT CLEARLY, provide as much information as possible



Client's Name: Dvy Creek WR Foontact Name: At ProbW Sampler's Name (if other than Contact):							
Report Required For:		Number of ANALYSIS	REQUESTED	How Sample	Other	Analysis	
Bio601.15 20NED- 100		Containers		reserved Type	Information	Completed	
1/310/50/11/5		Sample Type A W S V B O					
n - ph	115 1-5	Air Water	1 1 1 1	HNO ₃ Grab	(pH, Field Analysis,	Yes / No	
TOKE DI		Soils/Solids		H₂SO₄ or 4°C Composite	etc.)	(Lab use only)	
		<u>V</u> egetation		HCL.			
SAMPLE IDENTIFICATION	Collection Collection	Bioassay Other		None			
(Name, Location, etc.)	Date Time	Qther MATRIX					
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Custody Record MUST be	I WAR	Date/Time: 5 - 111 - 13	Received by:			Date/Time:	
Signed Sample Disposal:	Return to client:	Lab dispo	sal:	A	Log# . Free	704	

Copies to:

White - Book in Laboratory

Yellow - Laboratory Hard Copy

Pink - Client

Attachment: #4. Dry Creek Water Reclamation Facility

F. Pathogen reduction is accomplished through anaerobic digestion. The primary and secondary digested sludge is treated in the absence of air for mean cell residence time and temperature between 25 and 35 days at 92 to 100 degrees Fahrenheit. Air dried sludge is obtained with a tractor aerator on paved drying beds and on site unpaved storage area in windrows that are turned approximately once a month dependant on the weather conditions.

The Biosolids production (dry weight) at the Dry Creek WRF is over 1500 metric tons a year. Therefore samples are collected six times a year (February, April, May, June, August, October, and December). The laboratories analyze the dry samples for metals, nutrients, organics pathogens, volatile solids and total solids.

CERTIFICATION STATEMENT

I certify under the penalty of law, that the pathogen requirements in Part I.C.3, the management practices in Part I.D (if necessary) (including the practice in part I. D.13 if the table 4 annual pollutant limits are used) and the site restrictions in Part I.C.2 (if necessary) have been met. This determination has been made under my direction and supervision in accordance with the system designed to assure that qualified personnel properly gather and evaluate the information used to determine that pathogen requirements, the vector attraction reduction requirements, the management practices and the site restrictions have been met. I there are aware that significant penalties for false certification including the possibility of imprisonment.

Signature

Jim Hughes, Manager

Water Reclamation Division

Attachment: #5. Dry Creek Water Reclamation Facility

G. Vector attraction reduction requirements are met through anaerobic digestion when there is thirty eight percent or more reduction in volatile solids. Volatile solids destruction is measured weight by volume average ((Vol. Solids Reduction = VS in - VS out / (VS in -((VS in * VS out)) (Use Average). The sludge is also air dried in windrows for further vector attraction reduction. The dry solids in windrows are between 65% to 80% total volatile solids reduction before land application.

RE: Flows From: Primary North and Primary South Raw sludge Average: Total solids (change % to Mg/l (10000) (NRS & SRS): Total Vol Solids (NRS & SRS): Total C-2 (wasting) cake flow gal: C-1 (digested) Solids (mg/L) cake: C-1 Vol solids cake (mg/L): C-2 solids cake (mg/L): C-2 Vol Solids cake (mg/L) Cake flow from Rotary Drum Thicker to digester.

CERTIFICATION STATEMENT

I certify under the penalty of law, that the pathogen requirements in Part I.C.2, one of the vector attraction reduction alternatives in Part I.C.3, the management practices in part I.D (if necessary) (including practices in Part I.D.13 if the table 4 annual pollutant limits are used) and the site restrictions in part I.C.2 (if necessary) have been met. This determination has been made under my direction and supervision in accordance with information used to determine that the requirements, the vector attraction reduction requirements, the management practices and the site restrictions have been met. I am aware that there are significant penalties for false certification including the possibility imprisonment.

Signature

Jim Hughes, Manager

Water Reclamation Division

Attachment: #6. Dry Creek Water Reclamation Facility

H. Best management practices are accomplished by applying biosolids at a whole sludge application rate that is less than or equal to the agronomic rate for the specific site and plant species. The Biosolids are applied so that it does not adversely affect a threatened or endangered species.

Biosolids are not dispersed on sites that are flooded or snow covered, frozen ground with a slope of three percent or more to prevent run off into wetland or surface water. A buffer zone of thirty-five feet from waterways, stock wells, and surface water is observed. Biosolids land applications are prohibited to sites where the available phosphorous content of the existing soil exceeds 400 pounds per acre.

Stored Biosolids on the plant facility remain in windrows for two years or less. The Biosolids are land applied in the winter, spring and fall of the year, weather permitting. Biosolids and soil are analytically tested before disposal. Cheyenne's sludge management practice ensures compliance with both Federal and State parameters and provides for long term Biosolids procedures with little or no detriment to the environment, while enhancing the native grass and field crop production of those participating ranchers and farmers who utilize Biosolids as a fertilizer supplement and soil conditioner.

CERTIFICATION STATEMENT

I certify under the penalty of law that the pathogen requirements in Part I.C.2, one of the vector attraction reduction alternatives in I.C.3, Part the management practices in part I.D (if necessary) (including in the practices in Part I.D.13 if the table 4 annual pollutant limits are used) and the site restrictions in Part I.C.2 (if necessary) have been met. This determination has been made under my direction and supervision in accordance with the system designed to assure that qualified personal properly gather and evaluate the information used to determine that the pathogen requirements, the management practices and the site restrictions have been met. I am aware that there are significant penalties for false certification including the possibility of imprisonment.

Signature

Jim Hughes, Manager

Water Reclamation Division Attachment: #7.

Dry Creek Water Reclamation Facility

I. Site restrictions are first achieved through the quality of sewage sludge product which has been stabilized to reduce pathogenic organisms, which has been dried to a solids concentration of sixty percentile or greater and contains no hazardous or toxic compounds or chemicals in concentrations which exceed those authorized by the USA EPA REGION VIII and WYOMING DEQ for land application in Part C.1, Specific Limitations and Self Monitoring Requirements and Chemical Pollutant Limitations.

The dry sludge that is produced is class A and B which are applied primarily to range land. Before applying sewage sludge on rangeland, pastureland, farm land, or fields, soil samples have been collected and have had the appropriate soil analysis conducted.

The Class B Sludge with respect to pathogens has been in compliance with the entire site restrictions listed in Part I.C.2. No sludge or material derived from sludge exceeds the limits in Table 3 Part I.C.1. The Class A pathogen reduction limits in Part I.C.2 meets the first 4 vector attraction reduction alternatives in Part I.C.3. There are sufficient management practices used to prevent malfunctions deterioration, operator errors and discharges which may cause or lead to the release of sludge to the environment, a threat to human health or a nuisance.

CERTIFICATION STATEMENT

I certify under the penalty of law, that the pathogen requirements in Part I.C.2, one of the vector attraction in Part reduction alternatives I.C.3, the management practices in Part I.D (if necessary) including the practice in Part I.D.13 if the table 4 annual pollutant limits are used) and the site restrictions in Part I.C.2 (if necessary) have been met. This determination has been made under my direction and supervision in accordance with the system designed to assure that qualified personnel properly gather and evaluate the information used to determine that the pathogen requirements, the vector attractions reduction requirements, the management practices and restrictions have been met. I am aware that there are significant penalties for false certification including the possibility of imprisonment.

1 Mend Signature

Jim Hughes, Manager



ANALYTICAL RESULTS

DRY CREEK WWTP LABORATORY

Cheyenne BOPU 8911 Campstool Road Cheyenne, Wyoming 82007 Phone: 307-635-3163 Fax: 307-635-6833

Date Sampled: 05/14/13

Date Received: 05/14/13

Sample Location: Zone C

Sample Matrix: Compost

Sampled By: CB

Date Reported: 06/07/13

Date Fecal Analyzed: NA

Date Solids Analyzed: 05/15/13

Analyst(s): mw

EPA Method/Total Solids:

SM 19th Ed 2540B

EPA Method/Volatile Solids: SM 19th Ed 2540E

EPA Method/Fecal Coliform: SM 18th Ed 9221E (A-1 Media)

Row#	Total Solids %	Volatile Solids%	Fecal Coliform/ Dry Gram Sludge			
1	77.3	40.0	NA			
2	77.2	41.1	NA			
3	76.1	40.9	NA			
4	84.4	51.8	NA			
5	86.2	53.1	NA			
6	83.2	55.4	NA			
7	83.9	54.2	NA			

Comments:

All data meets QA/QC requirements; please see QA/QC files in Dry Creek Laboratory. NA = Not Analyzed

oader, Laboratory Supervisor

Page 1 of 1

Dry Creek WRF Laboratory For: TS & VS

Identification Reporting: No. WYSL - 22934

Permit No. WYG - <u>650002</u>

(Chevenne BOPU) Dry Creek Water Reclamation Facility

Samples and Analytical

Quality Assurance/Quality Control OA/QC

Date: 5-14-13 | Time: 9:35 | 1 [] AM [] PM

Analytical Sampling Records (Cheyenne BOPU) Dry Creek WRF Laboratory

[] Dates and time of samples collected
[] Sampling location documented
[] Sampling types appropriate
[] Sampling volumes recorded
[] Name of person sampling
[] Types of sampling containers
[] Methods of preservation
[] Sampling quality assurance/ quality control QA/QC available
[] Pollutant limits red flagged if over mg/kg (Table 1,2,3,4 and Section 503.13) (Class A and B Biosolids)
[] Certification statement signed with each laboratory analytical report:
1. Pathogen reduction
2. Vector attraction reduction operates at Dry Creek WRF analysis samples. Results from daily sheets and results, recorded daily.
3. Management Practices
4. Site restrictions
[] Class A sludge: average temperature, (volatile solids percent) and total solids Dry sludge) once a month. Turn rows once a month, <u>weather permitting</u> .
[] Chain of custody recorded
Date: $6 - 14 - 13$ Time: 9135 [] AM/[] PM

Analytical Records From: (Cheyenne BOPU) Dry Creek WRF To: (Cheyenne BOPU) Dry Creek WRF Laboratory

[] Date and time of samples analysis
[] Name of analyst
[] All analyses are reported on dry weight basis
[] Dry Creek WRF Laboratory 8911 Campstool Rd. Cheyenne, WY 82007 Ph: 307-635-3163 Fax: 307-635-6833
[] Analytical quality assurance/quality control (QA/QC) available
[] Analytical results available
[] Chain of custody record
·

Analytical Records From: (Cheyenne BOPU) Dry Creek WRF To: (Cheyenne BOPU) Dry Creek WRF Laboratory

Date and time of sample
Name of analyst
Analytical methods used
Analyses and calculation results properly documented or verified
All analysis are reported on dry weight basis with the exception of volatile solids or total solids in percent. (1quart plastic bag 450 grams) (7 quart plastic bags 3150 grams).
Volatile solids and total solids samples need to be analyzed six times a year for Class B Biosolids and 12 times a year for Class A Biosolids.
Analytical quality assurance/quality control (QA/QC) available
Analytical results available
Chain of custody record

Zone: \triangle Rows: \triangle - \triangle Date: \triangle Time: \triangle Time: \triangle [] AM [] PM

Analytical Sample Containers From: (Cheyenne BOPU) Dry Creek WRF To: (Cheyenne BOPU) Dry Creek WRF Laboratory

Dry Sludge for fecal results in MPN, and percent solids for Class A or Class B Biosolids. 1 quart Plastic bags 450 grams: 7 Quart Plastic bags total of 3150 grams. Fecal samples and results are analyzed at the Dry Creek WRF Laboratory in with six hours of the holding time. The results of fecal samples in (MPN) and (percent solids) need to be analyzed in, *February, April, June, August, October, and December. **January, March, May, July, September and November; test for TS and VS. Class A test for Helminth ova density limits > 1 egg/4g TS; Enteric virus density limits of > 1 PFU/4g

- 1. *' **Class A sludge < 1000 MPN/gram. (Test 12 times a year for TS and VS).
- 2. * Class B sludge < 2,000,000 MPN/gram
- 3. Percent solids, 75 % or better for Class A Biosolids and Class B Biosolids.
- 4. Chain of custody record

Zone: C Rows: 1 - 7 Date: 5 - 14 - 13 Time: 9135 [] AM [] PM

Project Name: <u>B1050115</u>
Location: Dry Creek WLF.
Address: 8911 Cam pstool Rd.
City: Cheyenne State: [] Zip Code: 82007.
Samples Collected by: Chat Bould .[Date/Time: 6-/4-13/943577M
Analytical Certification
This certification must be completed by the Analytical Laboratory performing service for the Cheyenne Board of Public Utilities and submitted with each "Analytical Report.
"I certify that these analysis and resulting report (s) were prepared under my direction and supervision in accordance with a system designed to assure that qualified personal properly analyze all samples and accurately report the results. I certify that all analysis were performed in accordance with method approved for wastewater under the latest revision to 40 CFR Part 503 Sludge Regulation. Based on my inquiry of the person or persons who manage the system, or those person directly responsible for analyzing, the wastewater samples and generating the report (s), the analysis, report, and information submitted is to the best on my knowledge and belief, true, accurate, and completed."
Name of Laboratory: Dyy Creek URF.
Address: 79/1 Camp Stoc Rd.
City: Cheyenne State: Wy Zip Code: 82007.
Name of Analyst:
This Certification is signed by:
Date: 6-23-13] Time: //30 IMAM [] PM



Chain of Custody and Analytical Request Record
PLEASE PRINT CLEARLY, provide as much information as possible

Page	/ of	
<u> </u>	_ 7	

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Client's Name: Dr 1/	CX	erkw	RF co	ntact Name:	Chit		whe			- · · · · · · · · · · · · · · · · · · ·	ler's l	Name (if o	ther than Contact):_	
Report Required F			•	****	Number of Containers Sample Type		YSIS R	EQUE	STEI		ow erved	Sample <u>Type</u>	Other <u>information</u>	Analysis Completed
			A W S V B O Air Water Soils/Solids Vegetation Bioassay				,	H ₂ ;	HNO ₃ Grab H ₂ SO ₄ or 4°C Composite HCL None		(pH, Field Analysis, etc.)	Yes / No (Lab use only)		
SAMPLE IDEN (Name, Loca			Collection Date	Time	MATRIX	F						: 		
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Signed Sample Disposal: Return to client:				Lab disposal:						Log#	763			
	ID#	14.43	1	77/3H	Permi	t#	14/	16	1	6 60	00	2		

Copies to:

White - Book in Laboratory

Yellow - Laboratory Hard Copy

Pink - Client

Attachment: #4. Dry Creek Water Reclamation Facility

F. Pathogen reduction is accomplished through anaerobic digestion. The primary and secondary digested sludge is treated in the absence of air for mean cell residence time and temperature between 25 and 35 days at 92 to 100 degrees Fahrenheit. Air dried sludge is obtained with a tractor aerator on paved drying beds and on site unpaved storage area in windrows that are turned approximately once a month dependant on the weather conditions.

The Biosolids production (dry weight) at the Dry Creek WRF is over 1500 metric tons a year. Therefore samples are collected six times a year (February, April, May, June, August, October, and December). The laboratories analyze the dry samples for metals, nutrients, organics pathogens, volatile solids and total solids.

CERTIFICATION STATEMENT

I certify under the penalty of law, that the pathogen requirements in Part I.C.3, the management practices in Part I.D (if necessary) (including the practice in part I.D.13 if the table 4 annual pollutant limits are used) and the site restrictions in Part I.C.2 (if necessary) have been met. This determination has been made under my direction and supervision in accordance with the system designed to assure that qualified personnel properly gather and evaluate the information used to determine that pathogen requirements, the vector attraction reduction requirements, the management practices and the site restrictions have been met. I am aware that there are significant penalties for false certification including the possibility of imprisonment.

Signature

Jim Hughes, Manager

Water Reclamation Division

Attachment: #5.

Dry Creek Water Reclamation Facility

G. Vector attraction reduction requirements are met through anaerobic digestion when there is thirty eight percent or more reduction in volatile solids. Volatile solids destruction is measured weight by volume average ((Vol. Solids Reduction = VS in - VS out / (VS in -((VS in * VS out)) (Use Average). The sludge is also air dried in windrows for further vector attraction reduction. The dry solids in windrows are between 65% to 80% total volatile solids reduction before land application.

RE: Flows From: Primary North and Primary South Raw sludge Average: Total solids (change % to Mg/l (10000) (NRS & SRS): Total Vol Solids (NRS & SRS): Total C-2 (wasting) cake flow gal: C-1 (digested) Solids (mg/L) cake: C-1 Vol solids cake (mg/L): C-2 solids cake (mg/L): C-2 Vol Solids cake (mg/L) Cake flow from Rotary Drum Thicker to digester.

CERTIFICATION STATEMENT

I certify under the penalty of law, that the pathogen requirements in Part I.C.2, one of the vector attraction alternatives in Part I.C.3, reduction the management practices in part I.D (if necessary) (including practices in Part I.D.13 if the table 4 annual pollutant limits are used) and the site restrictions in part I.C.2 (if necessary) have been met. This determination has been made under my direction and supervision in accordance with determine that the information used to requirements, the vector attraction reduction requirements, the management practices and the site restrictions have been met. I am aware that there are significant penalties for including the possibility false certification imprisonment.

Signature

Jim Hughes, Manager

Water Reclamation Division

H. Best management practices are accomplished by applying biosolids at a whole sludge application rate that is less than or equal to the agronomic rate for the specific site and plant species. The Biosolids are applied so that it does not adversely affect a threatened or endangered species.

Biosolids are not dispersed on sites that are flooded or snow covered, frozen ground with a slope of three percent or more to prevent run off into wetland or surface water. A buffer zone of thirty-five feet from waterways, stock wells, and surface water is observed. Biosolids land applications are prohibited to sites where the available phosphorous content of the existing soil exceeds 400 pounds per acre.

Stored Biosolids on the plant facility remain in windrows for two years or less. The Biosolids are land applied in the winter, spring and fall of the year, weather permitting. Biosolids and soil are analytically tested before disposal. Cheyenne's sludge management practice ensures compliance with both Federal and State parameters and provides for long term Biosolids procedures with little or no detriment to the environment, while enhancing the native grass and field crop production of those participating ranchers and farmers who utilize Biosolids as a fertilizer supplement and soil conditioner.

CERTIFICATION STATEMENT

I certify under the penalty of law that the pathogen requirements in Part I.C.2, one of the vector attraction reduction alternatives in I.C.3, Part the management practices in part I.D (if necessary) (including in the practices in Part I.D.13 if the table 4 annual pollutant limits are used) and the site restrictions in Part I.C.2 (if necessary) have been met. This determination has been made under my direction and supervision in accordance with the system designed to assure that qualified personal properly gather and evaluate the information used to determine that the pathogen requirements, the management practices and the site restrictions have been met. I am aware that there are significant penalties for false certification including the possibility of imprisonment.

Signature

Jim Hughes, Manager

Water Reclamation Division

Attachment: #7.

Dry Creek Water Reclamation Facility

I. Site restrictions are first achieved through the quality of sewage sludge product which has been stabilized to reduce pathogenic organisms, which has been dried to a solids concentration of sixty percentile or greater and contains no hazardous or toxic compounds or chemicals in concentrations which exceed those authorized by the USA EPA REGION VIII and WYOMING DEQ for land application in Part C.1, Specific Limitations and Self Monitoring Requirements and Chemical Pollutant Limitations.

The dry sludge that is produced is class A and B which are applied primarily to range land. Before applying sewage sludge on rangeland, pastureland, farm land, or fields, soil samples have been collected and have had the appropriate soil analysis conducted.

The <u>Class B</u> Sludge with respect to pathogens has been in compliance with the entire site restrictions listed in Part I.C.2. No sludge or material derived from sludge exceeds the limits in Table 3 Part I.C.1. The <u>Class A</u> pathogen reduction limits in Part I.C.2 meets the first 4 vector attraction reduction alternatives in Part I.C.3. There are sufficient management practices used to prevent malfunctions and deterioration, operator errors and discharges which may cause or lead to the release of sludge to the environment, a threat to human health or a nuisance.

CERTIFICATION STATEMENT

I certify under the penalty of law, that the pathogen requirements in Part I.C.2, one of the vector attraction reduction alternatives in Part I.C.3, the management practices in Part I.D (if necessary) including the practice in Part I.D.13 if the table 4 annual pollutant limits are used) and the site restrictions in Part I.C.2 (if necessary) have been met. This determination has been made under my direction and supervision in accordance with the system designed to assure that qualified personnel properly gather and evaluate the information used to determine that the pathogen requirements, the vector attractions reduction the management requirements, practices and the restrictions have been met. I am aware that there are significant penalties for false certification including the possibility of imprisonment.

Signature |



ANALYTICAL RESULTS

DRY CREEK WWTP LABORATORY

Cheyenne BOPU 8911 Campstool Road Cheyenne, Wyoming 82007 Phone: 307-635-3163 Fax: 307-635-6833

Date Sampled: 03/29/13

Date Received: 03/29/13

Sample Location: Zone E

Sample Matrix: Compost

Sampled By: CB

Date Reported: 04/10/13
Date Fecal Analyzed: NA

Date Fedal Analyzed, NA

Date Solids Analyzed: 04/10/13

Analyst(s): mw

EPA Method/Total Solids: SM 19th Ed 2540B EPA Method/Volatile Solids: SM 19th Ed 2540E

Total Solids %

EPA Method/Fecal Coliform: SM 18th Ed 9221E (A-1 Media)

Fecal Coliform/
Dry Gram Sludge

		, , , , , , , , , , , , , , , , , , , ,	
1	86.2	41.5	NA
2	86.0	39.2	NA
3	82.7	45.6	NA ·
4	87.4	39.9	NA
5	88.6	34.3	NA
6	84.3	41.3	NA
7	89.4	33.4	NA
8	88.8	37.3	NA
9	84.4	42.4	NA

Volatile Solids%

Comments:

Row#

All data meets QA/QC requirements; please see QA/QC files in Dry Creek Laboratory. NA = Not Analyzed

Kent Loader, Laboratory Supervisor

Date:

4.10.13

Page 1 of 1

Dry Creek WRF Laboratory For TS & VS

Identification Reporting: No. WYSL - 22934

Permit No. WYG - 650002

(Cheyenne BOPU) Dry Creek Water Reclamation Facility

Samples and Analytical

Quality Assurance/Quality Control OA/QC

Date: 3-29-13 | Time: 1/30 | [] AM [[PM]

Analytical Sampling Records (Cheyenne BOPU) Dry Creek WRF Laboratory

[] Dates and time of samples collected

[] Sampling location documented
[] Sampling types appropriate
[] Sampling volumes recorded
[] Name of person sampling
[] Types of sampling containers
[] Methods of preservation
[] Sampling quality assurance/ quality control QA/QC available
[] Pollutant limits red flagged if over mg/kg (Table 1,2,3,4 and Section 503.13) (Class A and B Biosolids)
[] Certification statement signed with each laboratory analytical report:
1. Pathogen reduction
2. Vector attraction reduction operates at Dry Creek WRF analysis samples. Results from daily sheets and results, recorded daily.
3. Management Practices
4. Site restrictions
[] Class A sludge: average temperature, (volatile solids percent) and total solids Dry sludge) once a month. Turn rows once a month, weather permitting.
[] Chain of custody recorded
Date: 3-29-13 Time://30 [] AM [] PI

Analytical Records From: (Cheyenne BOPU) Dry Creek WRF To: (Cheyenne BOPU) Dry Creek WRF Laboratory

[] Date and time of samples analysis
[] Name of analyst
[] All analyses are reported on dry weight basis
[] Dry Creek WRF Laboratory 8911 Campstool Rd. Cheyenne, WY 82007 Ph: 307-635-3163 Fax: 307-635-6833
[] Analytical quality assurance/quality control (QA/QC) available
[] Analytical results available
[] Chain of custody record

Date: 3-29-13 | Time: 1130 | [] AM [] PM

Analytical Records From: (Cheyenne BOPU) Dry Creek WRF To: (Cheyenne BOPU) Dry Creek WRF Laboratory

	Date and time of sample
	Name of analyst
[]	Analytical methods used
	Analyses and calculation results properly documented or verified
	All analysis are reported on dry weight basis with the exception of volatile solids or total solids in percent. (1quart plastic bag 450 grams) (7 quart plastic bags 3150 grams).
	Volatile solids and total solids samples need to be analyzed six times a year for Class B Biosolids and 12 times a year for Class A Biosolids.
[]	Analytical quality assurance/quality control (QA/QC) available
	Analytical results available
	Chain of custody record

Zone: F Rows: 1 - 9 Date: 3 - 29-13 Time: 1:30 [] AM [] PM

Analytical Sample Containers From: (Cheyenne BOPU) Dry Creek WRF To: (Cheyenne BOPU) Dry Creek WRF Laboratory

Dry Sludge for fecal results in MPN, and percent solids for Class A or Class B Biosolids. 1 quart Plastic bags 450 grams: 7 Quart Plastic bags total of 3150 grams. Fecal samples and results are analyzed at the Dry Creek WRF Laboratory in with six hours of the holding time. The results of fecal samples in (MPN) and (percent solids) need to be analyzed in, *February, April, June, August, October, and December. **January, March, May, July, September and November; test for TS and VS. Class A test for Helminth ova density limits > 1 egg/4g TS; Enteric virus density limits of > 1 PFU/4g

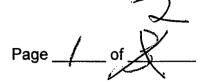
- 1. *' **Class A sludge < 1000 MPN/gram. (Test 12 times a year for TS and VS).
- 2. * Class B sludge < 2,000,000 MPN/gram
- 3. Percent solids, 75 % or better for Class A Biosolids and Class B Biosolids.
- 4. Chain of custody record

Zone: F Rows: $1 - \frac{9}{10}$ Date: $3 - \frac{9}{10} - \frac{13}{10}$ Time: $1 \cdot \frac{13}{10}$ [] AM []PM

Project Name: B105011d5
Location: Dry Creek WRF.
Address: 89/1 CampstoolRd.
City: Cheyenn State: 67 Zip Code: 82007.
City: Cheyennt State: Liy Zip Code: 82007. Samples Collected by: Chat Banker .[Date/Time: 3-24-13/4/30]
Analytical Certification
This certification must be completed by the Analytical Laboratory performing service for the Cheyenne Board of Public Utilities and submitted with each "Analytical Report.
"I certify that these analysis and resulting report (s) were prepared under my direction and supervision in accordance with a system designed to assure that qualified personal properly analyze all samples and accurately report the results. I certify that all analysis were performed in accordance with method approved for wastewater under the latest revision to 40 CFR Part 503 Sludge Regulation. Based on my inquiry of the person or persons who manage the system, or those person directly responsible for analyzing, the wastewater samples and generating the report (s), the analysis, report, and information submitted is to the best on my knowledge and belief, true, accurate, and completed."
Name of Laboratory: Dry Creek WRF.
Address: 89/1 Campstool Rd.
City: Cheyenne State: Wy Zip Code: 82007.
Name of Analyst:
This Certification is signed by:
Date: 6-78-13 Time: 0800 AM [] PM



Chain of Custody and Analytical Request Record PLEASE PRINT CLEARLY, provide as much information as possible



Client's Name: ∬n y Cveer	LLR Contact Name:	that Pray	Dell Samp	pler's Name (if ot	her than Contact):	
Report Required For:		Number of ANALYSIS	REQUESTED	low Sample	Other	Analysis
Biosolilo Zone E 1-		Containers Sample Type A W S V B O		served Type	Information (pH, Field Analysis,	Completed Yes / No
Zone E 1	- 7	Air Water Soils/Solids Yegetation Bioassay	H ₂ 4	2SO4 or 4°C Composite HCL Ione	etc.)	(Lab use only)
SAMPLE IDENTIFICATION (Name, Location, etc.)	Collection Collection Date Time	Other MATRIX				
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2						
3 3						
4						· · · · · · · · · · · · · · · · · · ·
5						
6						
7 1 1 1 7	1/1/	<u> </u>		/ J'		
Custody Record MUST be	Sayled	Date/Time: 3-29-13	Received by:			Date/Time:
Signed Sample Disposal:	Return to client:	Lab dispo			Log#	5 8 5

Copies to:

White - Book in Laboratory

Yellow Laboratory Hard Copy

Pink - Client



Chain of Custody and Analytical Request Record
PLEASE PRINT CLEARLY, provide as much information as possible

Page _____ of ____

Client's Name: Д∠ У С	vert W	€F Cont	act Name:_	The	11) Du	h	W	1		Sampler's I	Name (if o	ther than Contact):_	
Report Required For: Biogdids Zon PE				Number of Containers Sample Type A W S V B O <u>A</u> ir <u>W</u> ater	ANA	ALYS	IS R	EQU	EST	ED	How Preserved HNO ₃	Sample	Other Information (pH, Field Analysis,	Analysis <u>Completed</u> Yes / No
SAMPLE IDENTIF	FICATION	Collection Date	Collection Time	Soils/Solids Vegetation Bioassay Other	2	3					H₂SO₄ 4°C HCL None	or Composite	etc.)	(Lab use only)
(Name, Location	, etc.) RUW 8	3-24	12 30	MATRIX 10/05/L							MA	J-14h		
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6													,	
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Signed	mple Disposal:	Return to			*	ıb disp	osal	:	//		T * (1/)		Log#	535

Copies to:

White - Book in Laboratory

Yellow - Laboratory Hard Copy

Pink - Client

Attachment: #4. Dry Creek Water Reclamation Facility

F. Pathogen reduction is accomplished through anaerobic digestion. The primary and secondary digested sludge is treated in the absence of air for mean cell residence time and temperature between 25 and 35 days at 92 to 100 degrees Fahrenheit. Air dried sludge is obtained with a tractor aerator on paved drying beds and on site unpaved storage area in windrows that are turned approximately once a month dependant on the weather conditions.

The Biosolids production (dry weight) at the Dry Creek WRF is over 1500 metric tons a year. Therefore samples are collected six times a year (February, April, May, June, August, October, and December). The laboratories analyze the dry samples for metals, nutrients, organics pathogens, volatile solids and total solids.

CERTIFICATION STATEMENT

I certify under the penalty of law, that the pathogen requirements in Part I.C.3, the management practices in Part I.D (if necessary) (including the practice in part I.D.13 if the table 4 annual pollutant limits are used) and the site restrictions in Part I.C.2 (if necessary) have been met. This determination has been made under my direction and supervision in accordance with the system designed to assure that qualified personnel properly gather and evaluate the information used to determine that pathogen requirements, the vector attraction reduction requirements, the management practices and the site restrictions have been met. I am aware that there are significant penalties for false certification including the possibility of imprisonment.

Signature

Jim Hughes, Manager

Water Reclamation Division

Attachment: #5. Dry Creek Water Reclamation Facility

G. Vector attraction reduction requirements are met through anaerobic digestion when there is thirty eight percent or more reduction in volatile solids. Volatile solids destruction is measured weight by volume average ((Vol. Solids Reduction = VS in - VS out / (VS in -((VS in * VS out)) (Use Average). The sludge is also air dried in windrows for further vector attraction reduction. The dry solids in windrows are between 65% to 80% total volatile solids reduction before land application.

RE: Flows From: Primary North and Primary South Raw sludge Average: Total solids (change % to Mg/l (10000) (NRS & SRS): Total Vol Solids (NRS & SRS): Total C-2 (wasting) cake flow gal: C-1 (digested) Solids (mg/L) cake: C-1 Vol solids cake (mg/L): C-2 solids cake (mg/L): C-2 Vol Solids cake (mg/L) Cake flow from Rotary Drum Thicker to digester.

CERTIFICATION STATEMENT

I certify under the penalty of law, that the pathogen requirements in Part I.C.2, one of the vector attraction alternatives in Part I.C.3, reduction the management in part I.D (if necessary) (including practices practices in Part I.D.13 if the table 4 annual pollutant limits are used) and the site restrictions in part I.C.2 (if necessary) have been met. This determination has been made under my direction and supervision in accordance with information used to determine that the requirements, the vector attraction reduction requirements, the management practices and the site restrictions have been met. I am aware that there are significant penalties for including possibility false certification the imprisonment.

Signature

Jim Hughes, Manager

Water Reclamation Division

Attachment: #6. Dry Creek Water Reclamation Facility

H. Best management practices are accomplished by applying biosolids at a whole sludge application rate that is less than or equal to the agronomic rate for the specific site and plant species. The Biosolids are applied so that it does not adversely affect a threatened or endangered species.

Biosolids are not dispersed on sites that are flooded or snow covered, frozen ground with a slope of three percent or more to prevent run off into wetland or surface water. A buffer zone of thirty-five feet from waterways, stock wells, and surface water is observed. Biosolids land applications are prohibited to sites where the available phosphorous content of the existing soil exceeds 400 pounds per acre.

Stored Biosolids on the plant facility remain in windrows for two years or less. The Biosolids are land applied in the winter, spring and fall of the year, weather permitting. Biosolids and soil are analytically tested before disposal. Cheyenne's sludge management practice ensures compliance with both Federal and State parameters and provides for long term Biosolids procedures with little or no detriment to the environment, while enhancing the native grass and field crop production of those participating ranchers and farmers who utilize Biosolids as a fertilizer supplement and soil conditioner.

CERTIFICATION STATEMENT

I certify under the penalty of law that the pathogen requirements in Part I.C.2, one of the vector attraction reduction alternatives Part I.C.3, in the management practices in part I.D (if necessary) (including in the practices in Part I.D.13 if the table 4 annual pollutant limits are used) and the site restrictions in Part I.C.2 (if necessary) have been met. This determination has been made under my direction and supervision in accordance with the system designed to assure that qualified personal properly gather and evaluate the information used to determine that the pathogen requirements, the management practices and the site restrictions have been met. I am aware that there are significant penalties for false certification including the possibility of imprisonment.

Signature

Jim Hughes, Manager

Water Reclamation Division Attachment: #7.

Dry Creek Water Reclamation Facility

I. Site restrictions are first achieved through the quality of sewage sludge product which has been stabilized to reduce pathogenic organisms, which has been dried to a solids concentration of sixty percentile or greater and contains no hazardous or toxic compounds or chemicals in concentrations which exceed those authorized by the USA EPA REGION VIII and WYOMING DEQ for land application in Part C.1, Specific Limitations and Self Monitoring Requirements and Chemical Pollutant Limitations.

The dry sludge that is produced is class \underline{A} and \underline{B} which are applied primarily to range land. Before applying sewage sludge on rangeland, pastureland, farm land, or fields, soil samples have been collected and have had the appropriate soil analysis conducted.

The <u>Class B</u> Sludge with respect to pathogens has been in compliance with the entire site restrictions listed in Part I.C.2. No sludge or material derived from sludge exceeds the limits in Table 3 Part I.C.1. The <u>Class A</u> pathogen reduction limits in Part I.C.2 meets the first 4 vector attraction reduction alternatives in Part I.C.3. There are sufficient management practices used to prevent malfunctions and deterioration, operator errors and discharges which may cause or lead to the release of sludge to the environment, a threat to human health or a nuisance.

CERTIFICATION STATEMENT

I certify under the penalty of law, that the pathogen requirements in Part I.C.2, one of the vector attraction reduction alternatives in Part I.C.3, the management practices in Part I.D (if necessary) including the practice in Part I.D.13 if the table 4 annual pollutant limits are used) and the site restrictions in Part I.C.2 (if necessary) have been met. This determination has been made under my direction and supervision in accordance with the system designed to assure that qualified personnel properly gather and evaluate the information used to determine that the pathogen requirements, the vector attractions reduction requirements, the management practices and the restrictions have been met. I am aware that there are significant penalties for false certification including the possibility of imprisonment.

Signature

Jim Hughes, Manager



ANALYTICAL RESULTS

DRY CREEK WWTP LABORATORY

Cheyenne BOPU 8911 Campstool Road Cheyenne, Wyoming 82007 Phone: 307-635-3163 Fax: 307-635-6833

Date Sampled: 03/29/13

Date Received: 03/29/13

Sample Location: Zone D

Sample Matrix: Compost

Sampled By: CB

Date Reported: 04/10/13

Date Fecal Analyzed: NA

Date Solids Analyzed: 04/01/13

Analyst(s): mw

EPA Method/Total Solids:

SM 19th Ed 2540B

EPA Method/Volatile Solids: SM 19th Ed 2540E

EPA Method/Fecal Coliform: SM 18th Ed 9221E (A-1 Media)

	Row #	Total Solids %	Volatile Solids%	Fecal Coliform/ Dry Gram Sludge
Γ	1	84.5	40.6	NA ·
	2	86.4	39.9	NA
Γ		85.4	44.4	NA
I	4	85.9	36.4	NA
	5	86.6	41.8	NA

Comments:

All data meets QA/QC requirements; please see QA/QC files in Dry Creek Laboratory. NA = Not Analyzed

Kent Loader, Laboratory Supervisor

Dry Creek WRF Laboratory For TS & VS

Identification Reporting: No. WYSL - 22934

Permit No. WYG - <u>650002</u>

(Chevenne BOPU) Dry Creek Water Reclamation Facility

Samples and Analytical

Quality Assurance/Quality Control OA/QC

Date: 3-29-13 | Time: 3-29-19 | [] AM [] PM

Analytical Sampling Records (Cheyenne BOPU) Dry Creek WRF Laboratory

[] Dates and time of samples collected
[] Sampling location documented
[] Sampling types appropriate
[] Sampling volumes recorded
[] Name of person sampling
[] Types of sampling containers
[] Methods of preservation
[] Sampling quality assurance/ quality control QA/QC available
[] Pollutant limits red flagged if over mg/kg (Table 1,2,3,4 and Section 503.13) (Class A and B Biosolids)
[] Certification statement signed with each laboratory analytical report:
1. Pathogen reduction
2. Vector attraction reduction operates at Dry Creek WRF analysis samples. Results from daily sheets and results, recorded daily.
3. Management Practices
4. Site restrictions
[] Class A sludge: average temperature, (volatile solids percent) and total solids Dry sludge) once a month. Turn rows once a month, <u>weather permitting</u> .
[] Chain of custody recorded
Date: 3-29-13 Time: 10130 1 AM [] PM

Analytical Records From: (Cheyenne BOPU) Dry Creek WRF To: (Cheyenne BOPU) Dry Creek WRF Laboratory

[] Date and time of samples analysis	
[] Name of analyst	
[] All analyses are reported on dry weight basis	
[] Dry Creek WRF Laboratory 8911 Campstool Rd. Cheyenne, WY 82007 Ph: 307-635-3163 Fax: 307-635-6833	
[] Analytical quality assurance/quality control (QA/QC) available	
[] Analytical results available	
[] Chain of custody record	

Analytical Records From: (Cheyenne BOPU) Dry Creek WRF To: (Cheyenne BOPU) Dry Creek WRF Laboratory

[] Date and time of sample
[] Name of analyst
[] Analytical methods used
[] Analyses and calculation results properly documented or verified
[] All analysis are reported on dry weight basis with the exception of volatile solid or total solids in percent. (1quart plastic bag 450 grams) (7 quart plastic bags 3150 grams).
[] Volatile solids and total solids samples need to be analyzed six times a year for Class B Biosolids and 12 times a year for Class A Biosolids.
[] Analytical quality assurance/quality control (QA/QC) available
[] Analytical results available
[] Chain of custody record

Zone: 1 - 5 Date: 3-29-13 Time: 1/30 [] AM [] PM

Analytical Sample Containers From: (Cheyenne BOPU) Dry Creek WRF To: (Cheyenne BOPU) Dry Creek WRF Laboratory

Dry Sludge for fecal results in MPN, and percent solids for Class A or Class B Biosolids. 1 quart Plastic bags 450 grams: 7 Quart Plastic bags total of 3150 grams. Fecal samples and results are analyzed at the Dry Creek WRF Laboratory in with six hours of the holding time. The results of fecal samples in (MPN) and (percent solids) need to be analyzed in, *February, April, June, August, October, and December. **January, March, May, July, September and November; test for TS and VS. Class A test for Helminth ova density limits > 1 egg/4g TS; Enteric virus density limits of > 1 PFU/4g

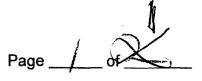
- 1. *' **Class A sludge < 1000 MPN/gram. (Test 12 times a year for TS and VS).
- 2. * Class B sludge < 2,000,000 MPN/gram
- 3. Percent solids, 75 % or better for Class A Biosolids and Class B Biosolids.
- 4. Chain of custody record

Zone: $\sqrt{\frac{5}{130}}$ Rows: $\sqrt{\frac{5}{130}}$ Date: $\sqrt{\frac{3-29-13}{130}}$ Time: $\sqrt{\frac{130}{130}}$ [] AM [] PM

Project Name: 15/050 1/6 5
Location: Dry Creek WRF.
Address: 8911 Camp 5 Tool Rd.
City: Cheyenne State: Ly Zip Code: 82007.
City: Chryenne State: Ly Zip Code: 82007. Samples Collected by: Chet Band Date/Time: 3-29-13/1/30p/
Analytical Certification
This certification must be completed by the Analytical Laboratory performing service for the Cheyenne Board of Public Utilities and submitted with each "Analytical Report.
"I certify that these analysis and resulting report (s) were prepared under my direction and supervision in accordance with a system designed to assure that qualified personal properly analyze all samples and accurately report the results. I certify that all analysis were performed in accordance with method approved for wastewater under the latest revision to 40 CFR Part 503 Sludge Regulation. Based on my inquiry of the person or persons who manage the system, or those person directly responsible for analyzing, the wastewater samples and generating the report (s), the analysis, report, and information submitted is to the best on my knowledge and belief, true, accurate, and completed."
Name of Laboratory: Dry Creek WRF.
Address: 89// Cumps Foul Rd,
City: Cheyenne State: My Zip Code: 8207.
Name of Analyst:
This Certification is signed by:
Date: 6-28-13 Time: 0800 YAM [] PM

Cheyenne Board of Public Utilities Water Reclamation Laboratory

Chain of Custody and Analytical Request Record PLEASE PRINT CLEARLY, provide as much information as possible



Client's Name <u></u>	Creek u	Contact Name:		•	other than Contact):
Report Required F	or:			S REQUESTED How Sample	
s de la companya de l			Containers	Preserved Type	Information Completed
67061	D Row		Sample Type A W S V B O		
	A Days	1-5	<u>A</u> ir <u>W</u> ater	HNO ₃ Grab	(pH, Field Analysis, Yes / No etc.) (Lab use only)
Lone	D KOW		Soils/Solids	4°C Composi	
			<u>V</u> egetation <u>B</u> ioassay	HCL None	
SAMPLE IDEN	ITIFICATION	Collection Collection		None	
(Name, Loca		Date Time	MATRIX		i i
12/APD	Rowl	3-39 12.2		NA 6-19	b
	1 ^		Toy MI		
2					
3	1 3				
3				+++++	
4	1 4				
5	1, 5				
			14 4		
6					
7					
Custody	Relinquished by:	1 1	Date/Time: 3-24-13	Received by:	Date/Time:
Record MUST be	Relinquished by:	pardell'	1:30pm	My	2) 29/13 1.20pm
Signed	Sample Disposal:	Return to client:	Lab dispo		Log# 584
	ID#	Cii 1774411	D	N 1 = 1 (a/a)	

Copies to:

White - Book in Laboratory

Yellow - Laboratory Hard Copy

Pink - Client

Attachment: #4. Dry Creek Water Reclamation Facility

F. Pathogen reduction is accomplished through anaerobic digestion. The primary and secondary digested sludge is treated in the absence of air for mean cell residence time and temperature between 25 and 35 days at 92 to 100 degrees Fahrenheit. Air dried sludge is obtained with a tractor aerator on paved drying beds and on site unpaved storage area in windrows that are turned approximately once a month dependant on the weather conditions.

The Biosolids production (dry weight) at the Dry Creek WRF is over 1500 metric tons a year. Therefore samples are collected six times a year (February, April, May, June, August, October, and December). The laboratories analyze the dry samples for metals, nutrients, organics pathogens, volatile solids and total solids.

CERTIFICATION STATEMENT

I certify under the penalty of law, that the pathogen requirements in Part I.C.3, the management practices in Part I.D (if necessary) (including the practice in part I.D.13 if the table 4 annual pollutant limits are used) and the site restrictions in Part I.C.2 (if necessary) have been met. This determination has been made under my direction and supervision in accordance with the system designed to assure that qualified personnel properly gather and evaluate the information used to determine that pathogen requirements, the vector attraction reduction requirements, the management practices and the site restrictions have been met. I am aware that there are significant penalties for false certification including the possibility of imprisonment.

Signature

Jim Hughes, Manager

Water Reclamation Division

Attachment: #5. Dry Creek Water Reclamation Facility

G. Vector attraction reduction requirements are met through anaerobic digestion when there is thirty eight percent or more reduction in volatile solids. Volatile solids destruction is measured weight by volume average ((Vol. Solids Reduction = VS in - VS out / (VS in -((VS in * VS out)) (Use Average). The sludge is also air dried in windrows for further vector attraction reduction. The dry solids in windrows are between 65% to 80% total volatile solids reduction before land application.

RE: Flows From: Primary North and Primary South Raw sludge Average: Total solids (change % to Mg/l (10000) (NRS & SRS): Total Vol Solids (NRS & SRS): Total C-2 (wasting) cake flow gal: C-1 (digested) Solids (mg/L) cake: C-1 Vol solids cake (mg/L): C-2 solids cake (mg/L): C-2 Vol Solids cake (mg/L) Cake flow from Rotary Drum Thicker to digester.

CERTIFICATION STATEMENT

I certify under the penalty of law, that the pathogen requirements in Part I.C.2, one of the vector attraction alternatives in Part I.C.3, the management practices in part I.D (if necessary) (including practices in Part I.D.13 if the table 4 annual pollutant limits are used) and the site restrictions in part I.C.2 (if necessary) have been met. This determination has been made under my direction and supervision in accordance with information used to determine that the requirements, the vector attraction reduction requirements, the management practices and the site restrictions have been met. I am aware that there are significant penalties for false certification including the possibility imprisonment.

Signature

Jim Hughes, Manager

Water Reclamation Division

Attachment: #6. Dry Creek Water Reclamation Facility

H. Best management practices are accomplished by applying biosolids at a whole sludge application rate that is less than or equal to the agronomic rate for the specific site and plant species. The Biosolids are applied so that it does not adversely affect a threatened or endangered species.

Biosolids are not dispersed on sites that are flooded or snow covered, frozen ground with a slope of three percent or more to prevent run off into wetland or surface water. A buffer zone of thirty-five feet from waterways, stock wells, and surface water is observed. Biosolids land applications are prohibited to sites where the available phosphorous content of the existing soil exceeds 400 pounds per acre.

Stored Biosolids on the plant facility remain in windrows for two years or less. The Biosolids are land applied in the winter, spring and fall of the year, weather permitting. Biosolids and soil are analytically tested before disposal. Cheyenne's sludge management practice ensures compliance with both Federal and State parameters and provides for long term Biosolids procedures with little or no detriment to the environment, while enhancing the native grass and field crop production of those participating ranchers and farmers who utilize Biosolids as a fertilizer supplement and soil conditioner.

CERTIFICATION STATEMENT

I certify under the penalty of law that the pathogen requirements in Part I.C.2, one of the vector attraction reduction alternatives in Part I.C.3, the management practices in part I.D (if necessary) (including in the practices in Part I.D.13 if the table 4 annual pollutant limits are used) and the site restrictions in Part I.C.2 (if necessary) have been met. This determination has been made under my direction and supervision in accordance with the system designed to assure that qualified personal properly gather and evaluate the information used to determine that the pathogen requirements, the management practices and the site restrictions have been met. I am aware that there are significant penalties for false certification including the possibility of imprisonment.

Signature

Jim Hughes, Manager

Water Reclamation Division Attachment: #7.

Dry Creek Water Reclamation Facility

I. Site restrictions are first achieved through the quality of sewage sludge product which has been stabilized to reduce pathogenic organisms, which has been dried to a solids concentration of sixty percentile or greater and contains no hazardous or toxic compounds or chemicals in concentrations which exceed those authorized by the USA EPA REGION VIII and WYOMING DEQ for land application in Part C.1, Specific Limitations and Self Monitoring Requirements and Chemical Pollutant Limitations.

The dry sludge that is produced is class A and B which are applied primarily to range land. Before applying sewage sludge on rangeland, pastureland, farm land, or fields, soil samples have been collected and have had the appropriate soil analysis conducted.

The <u>Class B</u> Sludge with respect to pathogens has been in compliance with the entire site restrictions listed in Part I.C.2. No sludge or material derived from sludge exceeds the limits in Table 3 Part I.C.1. The <u>Class A</u> pathogen reduction limits in Part I.C.2 meets the first 4 vector attraction reduction alternatives in Part I.C.3. There are sufficient management practices used to prevent malfunctions and deterioration, operator errors and discharges which may cause or lead to the release of sludge to the environment, a threat to human health or a nuisance.

CERTIFICATION STATEMENT

I certify under the penalty of law, that the pathogen requirements in Part I.C.2, one of the vector attraction reduction alternatives in Part I.C.3, the management practices in Part I.D (if necessary) including the practice in Part I.D.13 if the table 4 annual pollutant limits are used) and the site restrictions in Part I.C.2 (if necessary) have been met. This determination has been made under my direction and supervision in accordance with the system designed to assure that qualified personnel properly gather and evaluate the information used to determine that the pathogen requirements, the vector attractions reduction requirements, the management practices and the restrictions have been met. I am aware that there are significant penalties for false certification including the possibility of imprisonment.

Signature

Jim Hughes, Manager



ANALYTICAL RESULTS

DRY CREEK WWTP LABORATORY

Cheyenne BOPU 8911 Campstool Road Cheyenne, Wyoming 82007 Phone: 307-635-3163 Fax: 307-635-6833

Date Sampled: 03/29/13

Date Received: 03/29/13

Sample Location: Zone C

Sample Matrix: Compost

Sampled By: CB

Date Reported: 04/10/13

Date Fecal Analyzed: NA

Date Solids Analyzed: 04/01/13

Analyst(s): mw

EPA Method/Total Solids:

SM 19th Ed 2540B

EPA Method/Volatile Solids: SM 19th Ed 2540E

EPA Method/Fecal Coliform: SM 18th Ed 9221E (A-1 Media)

Row #	Total Solids %	Volatile Solids%	Fecal Coliform/ Dry Gram Sludge
1	81.9	45.9	NA ·
2	91.2	26.1	NA
3	88.1	37.1	NA
4	87.1	42.7	NA
5	90.3	37.4	NA
6	85.1	49.2	NA
7	84.7	51.9	NA

All data meets QA/QC requirements; please see QA/QC files in Dry Creek Laboratory. NA = Not Analyzed

Kent Loader, Laboratory Supervisor

Page 1 of 1

Dry Creek WRF Laboratory For TS & VS

Identification Reporting: No. WYSL - 22934

Permit No. WYG - <u>650002</u>

(Chevenne BOPU) Dry Creek Water Reclamation Facility

Samples and Analytical

Quality Assurance/Quality Control OA/QC

Date: <u>7-29-13</u> Time: <u>1',30</u> [] AM [] PM

Analytical Sampling Records (Cheyenne BOPU) Dry Creek WRF Laboratory

[] Dates and time of samples collected
[] Sampling location documented
[] Sampling types appropriate
[] Sampling volumes recorded
[] Name of person sampling
[] Types of sampling containers
[] Methods of preservation
[] Sampling quality assurance/ quality control QA/QC available
[] Pollutant limits red flagged if over mg/kg (Table 1,2,3,4 and Section 503.13) (Class A and B Biosolids)
[] Certification statement signed with each laboratory analytical report:
1. Pathogen reduction
2. Vector attraction reduction operates at Dry Creek WRF analysis samples. Results from daily sheets and results, recorded daily.
3. Management Practices
4. Site restrictions
[] Class A sludge: average temperature, (volatile solids percent) and total solids Dry sludge) once a month. Turn rows once a month, weather permitting.
[] Chain of custody recorded
Date: $3-29-13$ Time: $1/30$ [] AM [] PM

Analytical Records From: (Cheyenne BOPU) Dry Creek WRF To: (Cheyenne BOPU) Dry Creek WRF Laboratory

[] Date and time of samples analysis
[] Name of analyst
[] All analyses are reported on dry weight basis
[] Dry Creek WRF Laboratory 8911 Campstool Rd. Cheyenne, WY 82007 Ph: 307-635-3163 Fax: 307-635-6833
[] Analytical quality assurance/quality control (QA/QC) available
[] Analytical results available
[] Chain of custody record

Analytical Records From: (Cheyenne BOPU) Dry Creek WRF To: (Cheyenne BOPU) Dry Creek WRF Laboratory

[] Date	and time of sample
[] Name	e of analyst
[] Analy	ytical methods used
[] Analy	yses and calculation results properly documented or verified
or to	nalysis are reported on dry weight basis with the exception of volatile solids tal solids in percent. (1quart plastic bag 450 grams) (7 quart plastic bags grams).
~	tile solids and total solids samples need to be analyzed six times a year for s B Biosolids and 12 times a year for Class A Biosolids.
[] Analy	ytical quality assurance/quality control (QA/QC) available
[] Analy	ytical results available
[] Chaiı	n of custody record

Zone: \triangle Rows: \triangle - \triangle Date: 2-29+3 Time: 2-

Analytical Sample Containers From: (Cheyenne BOPU) Dry Creek WRF To: (Cheyenne BOPU) Dry Creek WRF Laboratory

Dry Sludge for fecal results in MPN, and percent solids for Class A or Class B Biosolids. 1 quart Plastic bags 450 grams: 7 Quart Plastic bags total of 3150 grams. Fecal samples and results are analyzed at the Dry Creek WRF Laboratory in with six hours of the holding time. The results of fecal samples in (MPN) and (percent solids) need to be analyzed in, *February, April, June, August, October, and December. **January, March, May, July, September and November; test for TS and VS. Class A test for Helminth ova density limits > 1 egg/4g TS; Enteric virus density limits of > 1 PFU/4g

- 1. *' **Class A sludge < 1000 MPN/gram. (Test 12 times a year for TS and VS).
- 2. * Class B sludge < 2,000,000 MPN/gram
- 3. Percent solids, 75 % or better for Class A Biosolids and Class B Biosolids.
- 4. Chain of custody record

Zone: 6 Rows: 1 - 7 Date: 3-29-13 Time: 1:30 [] AM [] PM

Project Name: BiOSO 1165			
Location: Dry creek WRT.			
Address: 89/1 CampsTouRV.			
City: Chey enry State 1 VO Zip Code: \$ 2007.			
Samples Collected by: Chat Bank Date/Time: 3-29-73/1; 3000			
Analytical Certification			
This certification must be completed by the Analytical Laboratory performing service for the Cheyenne Board of Public Utilities and submitted with each "Analytical Report.			
"I certify that these analysis and resulting report (s) were prepared under my direction and supervision in accordance with a system designed to assure that qualified personal properly analyze all samples and accurately report the results. I certify that all analysis were performed in accordance with method approved for wastewater under the latest revision to 40 CFR Part 503 Sludge Regulation. Based on my inquiry of the person or persons who manage the system, or those person directly responsible for analyzing, the wastewater samples and generating the report (s), the analysis, report, and information submitted is to the best on my knowledge and belief, true, accurate, and completed."			
Name of Laboratory: DVY CVER WRF.			
Address: 81/1 Campshul Ro.			
City: Chelyeum State: (V) Zip Code: 8200 7.			
Name of Analyst: This Certification is signed by:			
Date: 10-28-13 Time: 3			

Cheyenne Board of Public Utilities Water Reclamation Laboratory

Chain of Custody and Analytical Request Record PLEASE PRINT CLEARLY, provide as much information as possible

Page	of _/	/
· ·	7 7	

Client's Name: $D_r = V - C_{V-P} \times V$	AFContact Name:_	Ast P.		other than Contact):
Report Required For: 1.050 1.15 Zone C 1-7	1	Number of Containers Sample Type A W S V B O Air Water Soils/Solids Yegetation Bioassay	HNOs Grab H2SO4 4°C HCL None	Information Completed (pH, Field Analysis, Yes / No (Lab use only)
SAMPLE IDENTIFICATION (Name, Location, etc.)	Collection Date Collection Time	Qther MATRIX		
1 2 Une 6 Rinu	3 pm	18 hastin	MA GIAD	
2				
3				
4				
5				
6		1, 11		
7 1 1	1/ 1/.			
Custody Record MUST be	W	Date/Time: 3-21-13	Received by:	Date/Time: コトスティン レスステーへ
Signed Sample Disposal:	Return to client:	Lab dispo	sal:	Log# 503

Copies to:

White - Book in Laboratory

Yellow - Laboratory Hard Copy

Pink - Client

Attachment: #4. Dry Creek Water Reclamation Facility

F. Pathogen reduction is accomplished through anaerobic digestion. The primary and secondary digested sludge is treated in the absence of air for mean cell residence time and temperature between 25 and 35 days at 92 to 100 degrees Fahrenheit. Air dried sludge is obtained with a tractor aerator on paved drying beds and on site unpaved storage area in windrows that are turned approximately once a month dependant on the weather conditions.

The Biosolids production (dry weight) at the Dry Creek WRF is over 1500 metric tons a year. Therefore samples are collected six times a year (February, April, May, June, August, October, and December). The laboratories analyze the dry samples for metals, nutrients, organics pathogens, volatile solids and total solids.

CERTIFICATION STATEMENT

I certify under the penalty of law, that the pathogen requirements in Part I.C.3, the management practices in Part I.D (if necessary) (including the practice in part I. D.13 if the table 4 annual pollutant limits are used) and the site restrictions in Part I.C.2 (if necessary) have been met. This determination has been made under my direction and supervision in accordance with the system designed to assure that qualified personnel properly gather and evaluate the information used to determine that pathogen requirements, the vector attraction reduction requirements, the management practices and the site restrictions have been met. I am aware that there are significant penalties for false certification including the possibility of imprisonment.

Signature

Jim Hughes, Manager

Water Reclamation Division

Attachment: #5. Dry Creek Water Reclamation Facility

G. Vector attraction reduction requirements are met through anaerobic digestion when there is thirty eight percent or more reduction in volatile solids. Volatile solids destruction is measured weight by volume average ((Vol. Solids Reduction = VS in - VS out / (VS in -((VS in * VS out)) (Use Average). The sludge is also air dried in windrows for further vector attraction reduction. The dry solids in windrows are between 65% to 80% total volatile solids reduction before land application.

RE: Flows From: Primary North and Primary South Raw sludge Average: Total solids (change % to Mg/l (10000) (NRS & SRS): Total Vol Solids (NRS & SRS): Total C-2 (wasting) cake flow gal: C-1 (digested) Solids (mg/L) cake: C-1 Vol solids cake (mg/L): C-2 solids cake (mg/L): C-2 Vol Solids cake (mg/L) Cake flow from Rotary Drum Thicker to digester.

CERTIFICATION STATEMENT

I certify under the penalty of law, that the pathogen requirements in Part I.C.2, one of the vector attraction alternatives in Part reduction I.C.3, the management practices in part I.D (if necessary) (including practices in Part I.D.13 if the table 4 annual pollutant limits are used) and the site restrictions in part I.C.2 (if necessary) have been met. This determination has been made under my direction and supervision in accordance with information used to determine that the requirements, the vector attraction reduction requirements, the management practices and the site restrictions have been met. I am aware that there are significant penalties for false certification including the possibility imprisonment.

Signature

Jim Hughes, Manager

Water Reclamation Division

Attachment: #6. Dry Creek Water Reclamation Facility

H. Best management practices are accomplished by applying biosolids at a whole sludge application rate that is less than or equal to the agronomic rate for the specific site and plant species. The Biosolids are applied so that it does not adversely affect a threatened or endangered species.

Biosolids are not dispersed on sites that are flooded or snow covered, frozen ground with a slope of three percent or more to prevent run off into wetland or surface water. A buffer zone of thirty-five feet from waterways, stock wells, and surface water is observed. Biosolids land applications are prohibited to sites where the available phosphorous content of the existing soil exceeds 400 pounds per acre.

Stored Biosolids on the plant facility remain in windrows for two years or less. The Biosolids are land applied in the winter, spring and fall of the year, weather permitting. Biosolids and soil are analytically tested before disposal. Cheyenne's sludge management practice ensures compliance with both Federal and State parameters and provides for long term Biosolids procedures with little or no detriment to the environment, while enhancing the native grass and field crop production of those participating ranchers and farmers who utilize Biosolids as a fertilizer supplement and soil conditioner.

CERTIFICATION STATEMENT

certify under the penalty of law that the pathogen requirements in Part I.C.2, one of the vector attraction reduction alternatives in Part I.C.3, the management practices in part I.D (if necessary) (including in the practices in Part I.D.13 if the table 4 annual pollutant limits are used) and the site restrictions in Part I.C.2 (if necessary) have been met. This determination has been made under my direction and supervision in accordance with the system designed to assure that qualified personal properly gather and evaluate the information used to determine that the pathogen requirements, the management practices and the site restrictions have been met. I am aware that there are significant penalties for false certification including the possibility of imprisonment.

Signature

Jim Hughes, Manager

Water Reclamation Division Attachment: #7.

Dry Creek Water Reclamation Facility

I. Site restrictions are first achieved through the quality of sewage sludge product which has been stabilized to reduce pathogenic organisms, which has been dried to a solids concentration of sixty percentile or greater and contains no hazardous or toxic compounds or chemicals in concentrations which exceed those authorized by the USA EPA REGION VIII and WYOMING DEQ for land application in Part C.1, Specific Limitations and Self Monitoring Requirements and Chemical Pollutant Limitations.

The dry sludge that is produced is class \underline{A} and \underline{B} which are applied primarily to range land. Before applying sewage sludge on rangeland, pastureland, farm land, or fields, soil samples have been collected and have had the appropriate soil analysis conducted.

The <u>Class B</u> Sludge with respect to pathogens has been in compliance with the entire site restrictions listed in Part I.C.2. No sludge or material derived from sludge exceeds the limits in Table 3 Part I.C.1. The <u>Class A</u> pathogen reduction limits in Part I.C.2 meets the first 4 vector attraction reduction alternatives in Part I.C.3. There are sufficient management practices used to prevent malfunctions and deterioration, operator errors and discharges which may cause or lead to the release of sludge to the environment, a threat to human health or a nuisance.

CERTIFICATION STATEMENT

I certify under the penalty of law, that the pathogen requirements in Part I.C.2, one of the vector attraction reduction alternatives in Part I.C.3, the management practices in Part I.D (if necessary) including the practice in Part I.D.13 if the table 4 annual pollutant limits are used) and the site restrictions in Part I.C.2 (if necessary) have been met. This determination has been made under my direction and supervision in accordance with the system designed to assure that qualified personnel properly gather and evaluate the information used to determine that the pathogen requirements, the vector attractions reduction requirements, the management practices and restrictions have been met. I am aware that there are significant penalties for false certification including the possibility of imprisonment.

Signature

Jim Hughes, Manager



ANALYTICAL RESULTS

DRY CREEK WWTP LABORATORY

Cheyenne BOPU 8911 Campstool Road Cheyenne, Wyoming 82007 Phone: 307-635-3163 Fax: 307-635-6833

Date Sampled: 01/31/13

Date Received: 01/31/13 Sample Location: Zone C

Sample Matrix: Compost

Sampled By: CB

Date Reported: 03/04/13 Date Fecal Analyzed: NA

Date Solids Analyzed: 02/12/13

Analyst(s): mw

EPA Method/Total Solids:

SM 19th Ed 2540B

EPA Method/Volatile Solids: SM 19th Ed 2540E EPA Method/Fecal Coliform: SM 18th Ed 9221E (A-1 Media)

Fecal Coliform/

Row #	Total Solids %	Volatile Solids%	Dry Gram Sludge
1	81.8	47.2	NA
2	82.7	51.9	NA
3	87.1	51.6	NA
4	87.4	39.0	NA
5	85.6	51.6	NA
6	85.9	44.9	NA
7	85.0	59.6	NA

Comments:

All data meets QA/QC requirements; please see QA/QC files in Dry Creek Laboratory. NA = Not Analyzed

Kent Løader, Laboratory Supervisor

Dry Creek WRF Laboratory For TS & VS

Identification Reporting: No. WYSL - 22934

Permit No. WYG - <u>650002</u>

(Cheyenne BOPU) Dry Creek Water Reclamation Facility

Samples and Analytical

Quality Assurance/Quality Control OA/QC

Date: 1-31-13 | Time: 10120 | [] AM |] PM

Analytical Sampling Records (Cheyenne BOPU) Dry Creek WRF Laboratory

[] Dates and time of samples collected
[] Sampling location documented
[] Sampling types appropriate
[] Sampling volumes recorded
[] Name of person sampling
[] Types of sampling containers
[] Methods of preservation
[] Sampling quality assurance/ quality control QA/QC available
[] Pollutant limits red flagged if over mg/kg (Table 1,2,3,4 and Section 503.13) (Class A and B Biosolids)
[] Certification statement signed with each laboratory analytical report:
1. Pathogen reduction
2. Vector attraction reduction operates at Dry Creek WRF analysis samples. Results from daily sheets and results, recorded daily.
3. Management Practices
4. Site restrictions
[] Class A sludge: average temperature, (volatile solids percent) and total solids Dry sludge) once a month. Turn rows once a month, <u>weather permitting</u> .
[] Chain of custody recorded
Date: 1-31-1.3 Time: 1012-0 [] AM [] PM

Analytical Records From: (Cheyenne BOPU) Dry Creek WRF To: (Cheyenne BOPU) Dry Creek WRF Laboratory

[] Date and time of samples analysis
[] Name of analyst
[] All analyses are reported on dry weight basis
[] Dry Creek WRF Laboratory
8911 Campstool Rd.
Cheyenne, WY 82007
Ph: 307-635-3163
Fax: 307-635-6833
[] Analytical quality assurance/quality control (QA/QC) available
[] Analytical results available
[] Chain of custody record

Date: 1-3b-13 | Time: 10!20 | [] AM |] PM

Analytical Records From: (Cheyenne BOPU) Dry Creek WRF To: (Cheyenne BOPU) Dry Creek WRF Laboratory

[] Date and time of sample
[] Name of analyst
[] Analytical methods used
[] Analyses and calculation results properly documented or verified
[] All analysis are reported on dry weight basis with the exception of volatile solid or total solids in percent. (1quart plastic bag 450 grams) (7 quart plastic bags 3150 grams).
[] Volatile solids and total solids samples need to be analyzed six times a year for Class B Biosolids and 12 times a year for Class A Biosolids.
[] Analytical quality assurance/quality control (QA/QC) available
[] Analytical results available
[] Chain of custody record
1-31-13 ^{CB}
Zone: C Rows: 1 - 7 Date: Fr Time: 10120 [] AM [] PM

Analytical Sample Containers From: (Cheyenne BOPU) Dry Creek WRF To: (Cheyenne BOPU) Dry Creek WRF Laboratory

Dry Sludge for fecal results in MPN, and percent solids for Class A or Class B Biosolids. 1 quart Plastic bags 450 grams: 7 Quart Plastic bags total of 3150 grams. Fecal samples and results are analyzed at the Dry Creek WRF Laboratory in with six hours of the holding time. The results of fecal samples in (MPN) and (percent solids) need to be analyzed in, *February, April, June, August, October, and December. **January, March, May, July, September and November; test for TS and VS. Class A test for Helminth ova density limits > 1 egg/4g TS; Enteric virus density limits of > 1 PFU/4g

- 1. *' **Class A sludge < 1000 MPN/gram. (Test 12 times a year for TS and VS).
- 2. * Class B sludge < 2,000,000 MPN/gram
- 3. Percent solids, 75 % or better for Class A Biosolids and Class B Biosolids.
- 4. Chain of custody record

Zone: [] Rows: 1 - 7 Date: 1-3/-13 Time: 10/12 [] AM [] PM

Project Name: 15/050/125.
Location: Dry Creek WRF.
Address: 89/1 Camp 5 too/Rd.
City: Chevenny State: WY Zip Code: 82007.
City: Cheyenne State: Wy Zip Code: 8 2007. Samples Collected by: (Let Baybul. [Date/Time:]-3]-13/10'20A
Analytical Certification
This certification must be completed by the Analytical Laboratory performing service for the Cheyenne Board of Public Utilities and submitted with each "Analytical Report.
"I certify that these analysis and resulting report (s) were prepared under my direction and supervision in accordance with a system designed to assure that qualified personal properly analyze all samples and accurately report the results. I certify that all analysis were performed in accordance with method approved for wastewater under the latest revision to 40 CFR Part 503 Sludge Regulation. Based on my inquiry of the person or persons who manage the system, or those person directly responsible for analyzing, the wastewater samples and generating the report (s), the analysis, report, and information submitted is to the best on my knowledge and belief, true, accurate, and completed."
Name of Laboratory: Dry Creek LuRF.
Address: 89// Canpstool Rd
City: Cheyenne State: Wy Zip Code: 82007.
Name of Analyst:
This Certification is signed by:
Date: Time: I AM I PM

Cheyenne Board of Public Utilities Water Reclamation Laboratory

Chain of Custody and Analytical Request Record PLEASE PRINT CLEARLY, provide as much information as possible

	1		
Page		of	

Client's Name: <u>∳</u> √ <u></u> _		E Cont	act Name:_	Ast		I XU				Sampler's	Name (if o	ther than Contact):_	1.
Report Required For:		Number of Containers Sample Type A W S V B C Air <u>W</u> ater <u>S</u> oils/ <u>S</u> olids <u>V</u> egetation <u>B</u> ioassay	e	ALYS	S RE	EQUESTED	How Preserved HNO3 H2SO4 4°C HCL	Sample	Other Information (pH, Field Analysis, etc.)	Analysis Completed Yes / No (Lab use only)			
SAMPLE IDEN (Name, Loc		Collection Date	Collection Time	<u>O</u> ther MATRIX	13	Ů,				None			
126ne C	RAD 1)-71 13	9:11	1017/3/						ny	Grus		
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Custody Record MUST be	Relinquished by:	media	•	Date/Time:		. W1		eceived I	by:				Date/Time:
Signed	Sample Disposal:	Return to				ab disp		<u> </u>		,,		Log#	555

Copies to:

White - Book in Laboratory

Yellow - Laboratory Hard Copy

Pink - Client

Project Name: 13/050 11d5
Location: DVY CVOPEWRF.
Address: 8911 Campstoul Rd.
City: Chevenne State: 10 Zip Code: 8200 7.
Samples Collected by: Chet Bacher .[Date/Time: 7-34-13/1036
Analytical Certification
This certification must be completed by the Analytical Laboratory performing service for the Cheyenne Board of Public Utilities and submitted with each "Analytical Report.
"I certify that these analysis and resulting report (s) were prepared under my direction and supervision in accordance with a system designed to assure that qualified personal properly analyze all samples and accurately report the results. I certify that all analysis were performed in accordance with method approved for wastewater under the latest revision to 40 CFR Part 503 Sludge Regulation. Based on my inquiry of the person or persons who manage the system, or those person directly responsible for analyzing, the wastewater samples and generating the report (s), the analysis, report, and information submitted is to the best on my knowledge and belief, true, accurate, and completed."
Name of Laboratory: Dry Creek WRF.
Address: 89/1 Campstoul Rd.
City: Cheyense State: 1 Zip Code: 82007.
Name of Analyst:
This Certification is signed by:
Date: (2-72-13 Time: 080) WAM [] PM

Attachment: #4. Dry Creek Water Reclamation Facility

F. Pathogen reduction is accomplished through anaerobic digestion. The primary and secondary digested sludge is treated in the absence of air for mean cell residence time and temperature between 25 and 35 days at 92 to 100 degrees Fahrenheit. Air dried sludge is obtained with a tractor aerator on paved drying beds and on site unpaved storage area in windrows that are turned approximately once a month dependant on the weather conditions.

The Biosolids production (dry weight) at the Dry Creek WRF is over 1500 metric tons a year. Therefore samples are collected six times a year (February, April, May, June, August, October, and December). The laboratories analyze the dry samples for metals, nutrients, organics pathogens, volatile solids and total solids.

CERTIFICATION STATEMENT

I certify under the penalty of law, that the pathogen requirements in Part I.C.3, the management practices in Part I.D (if necessary) (including the practice in part I. D.13 if the table 4 annual pollutant limits are used) and the site restrictions in Part I.C.2 (if necessary) have been met. This determination has been made under my direction and supervision in accordance with the system designed to assure that qualified personnel properly gather and evaluate the information used to determine that pathogen requirements, the vector attraction reduction requirements, the management practices and the site restrictions have been met. I am there are significant penalties aware that for false certification including the possibility of imprisonment.

Signature

Jim Hughes, Manager

Water Reclamation Division

Attachment: #5. Dry Creek Water Reclamation Facility

G. Vector attraction reduction requirements are met through anaerobic digestion when there is thirty eight percent or more reduction in volatile solids. Volatile solids destruction is measured weight by volume average ((Vol. Solids Reduction = VS in - VS out / (VS in -((VS in * VS out)) (Use Average). The sludge is also air dried in windrows for further vector attraction reduction. The dry solids in windrows are between 65% to 80% total volatile solids reduction before land application.

RE: Flows From: Primary North and Primary South Raw sludge Average: Total solids (change % to Mg/l (10000) (NRS & SRS): Total Vol Solids (NRS & SRS): Total C-2 (wasting) cake flow gal: C-1 (digested) Solids (mg/L) cake: C-1 Vol solids cake (mg/L): C-2 solids cake (mg/L): C-2 Vol Solids cake (mg/L) Cake flow from Rotary Drum Thicker to digester.

CERTIFICATION STATEMENT

I certify under the penalty of law, that the pathogen requirements in Part I.C.2, one of the vector attraction alternatives in Part I.C.3, reduction the practices in part I.D (if necessary) (including practices in Part I.D.13 if the table 4 annual pollutant limits are used) and the site restrictions in part I.C.2 (if necessary) have been met. This determination has been made under my direction and supervision in accordance with information used to determine that the requirements, the vector attraction reduction requirements, the management practices and the site restrictions have been met. I am aware that there are significant penalties for false certification including the possibility imprisonment.

Signature

Jim Hughes, Manager

Water Reclamation Division

H. Best management practices are accomplished by applying biosolids at a whole sludge application rate that is less than or equal to the agronomic rate for the specific site and plant species. The Biosolids are applied so that it does not adversely affect a threatened or endangered species.

Biosolids are not dispersed on sites that are flooded or snow covered, frozen ground with a slope of three percent or more to prevent run off into wetland or surface water. A buffer zone of thirty-five feet from waterways, stock wells, and surface water is observed. Biosolids land applications are prohibited to sites where the available phosphorous content of the existing soil exceeds 400 pounds per acre.

Stored Biosolids on the plant facility remain in windrows for two years or less. The Biosolids are land applied in the winter, spring and fall of the year, weather permitting. Biosolids and soil are analytically tested before disposal. Cheyenne's sludge management practice ensures compliance with both Federal and State parameters and provides for long term Biosolids procedures with little or no detriment to the environment, while enhancing the native grass and field crop production of those participating ranchers and farmers who utilize Biosolids as a fertilizer supplement and soil conditioner.

CERTIFICATION STATEMENT

certify under the penalty of law that the pathogen requirements in Part I.C.2, one of the vector attraction I.C.3, reduction alternatives in Part the management (including in the practices in part I.D (if necessary) practices in Part I.D.13 if the table 4 annual pollutant limits are used) and the site restrictions in Part I.C.2 (if necessary) have been met. This determination has been made under my direction and supervision in accordance with the system designed to assure that qualified personal properly gather and evaluate the information used to determine that the pathogen requirements, the management practices and the site restrictions have been met. I am aware that there are significant penalties for false certification including the possibility of imprisonment.

Signature

Jim Hughes, Manager

Water Reclamation Division Attachment: #7.

Dry Creek Water Reclamation Facility

I. Site restrictions are first achieved through the quality of sewage sludge product which has been stabilized to reduce pathogenic organisms, which has been dried to a solids concentration of sixty percentile or greater and contains no hazardous or toxic compounds or chemicals in concentrations which exceed those authorized by the USA EPA REGION VIII and WYOMING DEQ for land application in Part C.1, Specific Limitations and Self Monitoring Requirements and Chemical Pollutant Limitations.

The dry sludge that is produced is class A and B which are applied primarily to range land. Before applying sewage sludge on rangeland, pastureland, farm land, or fields, soil samples have been collected and have had the appropriate soil analysis conducted.

The <u>Class B</u> Sludge with respect to pathogens has been in compliance with the entire site restrictions listed in Part I.C.2. No sludge or material derived from sludge exceeds the limits in Table 3 Part I.C.1. The <u>Class A</u> pathogen reduction limits in Part I.C.2 meets the first 4 vector attraction reduction alternatives in Part I.C.3. There are sufficient management practices used to prevent malfunctions and deterioration, operator errors and discharges which may cause or lead to the release of sludge to the environment, a threat to human health or a nuisance.

CERTIFICATION STATEMENT

I certify under the penalty of law, that the pathogen requirements in Part I.C.2, one of the vector attraction reduction alternatives in Part I.C.3, the management practices in Part I.D (if necessary) including the practice in Part I.D.13 if the table 4 annual pollutant limits are used) and the site restrictions in Part I.C.2 (if necessary) have been met. This determination has been made under my direction and supervision in accordance with the system designed to assure that qualified personnel properly gather and evaluate the information used to determine that the pathogen requirements, the vector attractions reduction requirements, the management practices and the restrictions have been met. I am aware that there are significant penalties for false certification including the possibility of imprisonment.

Signature Ma

Jim()Hughes, Manager



ANALYTICAL RESULTS

DRY CREEK WWTP LABORATORY

Cheyenne BOPU 8911 Campstool Road Cheyenne, Wyoming 82007 Phone: 307-635-3163 Fax: 307-635-6833

Date Sampled: 01/31/13

Date Received: 01/31/13

Sample Location: Zone D

Sample Matrix: Compost

Sampled By: CB

Date Reported: 03/04/13 Date Fecal Analyzed: NA

Date Solids Analyzed: 02/06/13

Analyst(s): mw

EPA Method/Total Solids:

SM 19th Ed 2540B

EPA Method/Volatile Solids: SM 19th Ed 2540E

EPA Method/Fecal Coliform: SM 18th Ed 9221E (A-1 Media)

Fecal Coliform/

Row #	Total Solids %	Volatile Solids%	Dry Gram Sludge
1	87.6	35.2	NA
2	89.5	35.7	NA ·
3	86.2	48.2	NA
4	88.7	43.3	NA
5	85.2	46.6	NA

Comments:

All data meets QA/QC requirements; please see QA/QC files in Dry Creek Laboratory. NA = Not Analyzed

Kent Loader, Laboratory Supervisor

Date:

Dry Creek WRF Laboratory For TS & VS

Identification Reporting: No. WYSL - 22934

Permit No. WYG - <u>650002</u>

(Cheyenne BOPU) Dry Creek Water Reclamation Facility

Samples and Analytical

Quality Assurance/Quality Control OA/QC

Date: 1-31-13 Time: 10'(20) [] [AM [] PM

Analytical Sampling Records (Cheyenne BOPU) Dry Creek WRF Laboratory

[] Dates and time of samples coll	ected	
[] Sampling location documented	1	
[] Sampling types appropriate		
[] Sampling volumes recorded		
[] Name of person sampling		
[] Types of sampling containers		
[] Methods of preservation		
[] Sampling quality assurance/ q	uality control QA/QC available	
[] Pollutant limits red flagged if (Class A and B Biosolids)	over mg/kg (Table 1,2,3,4 and Se	ection 503.13)
[] Certification statement signed	with each laboratory analytical	report:
1. Pathogen reduction		
2. Vector attraction reduction Results from daily sheets an	operates at Dry Creek WRF and id results, recorded daily.	alysis samples.
3. Management Practices		·
4. Site restrictions		
[] Class A sludge: average tempe Dry sludge) once a month. Tu	rature, (volatile solids percent) a rn rows once a month, <u>weather p</u>	
[] Chain of custody recorded		
Date: 1-21-13	1 Time: 1 (2) 2-17	1 II AM II PN

Analytical Records From: (Cheyenne BOPU) Dry Creek WRF To: (Cheyenne BOPU) Dry Creek WRF Laboratory

[] Date and time of samples analysis	
[] Name of analyst	
[] All analyses are reported on dry weight basis	
[] Dry Creek WRF Laboratory	
8911 Campstool Rd.	
Cheyenne, WY 82007	
Ph: 307-635-3163	
Fax: 307-635-6833	
[] Analytical quality assurance/quality control (QA/QC) available	
[] Analytical results available	
[] Chain of custody record	
·	

Analytical Records From: (Cheyenne BOPU) Dry Creek WRF To: (Cheyenne BOPU) Dry Creek WRF Laboratory

] Date and time of sample
] Name of analyst
] Analytical methods used
Analyses and calculation results properly documented or verified
All analysis are reported on dry weight basis with the exception of volatile solids or total solids in percent. (1quart plastic bag 450 grams) (7 quart plastic bags 3150 grams).
Volatile solids and total solids samples need to be analyzed six times a year for Class B Biosolids and 12 times a year for Class A Biosolids.
Analytical quality assurance/quality control (QA/QC) available
] Analytical results available
Chain of custody record

Zone: 1 - 5 Date: 1-3/-13 Time: 10120 [] 6M [] PM

Analytical Sample Containers From: (Cheyenne BOPU) Dry Creek WRF To: (Cheyenne BOPU) Dry Creek WRF Laboratory

Dry Sludge for fecal results in MPN, and percent solids for Class A or Class B Biosolids. 1 quart Plastic bags 450 grams: 7 Quart Plastic bags total of 3150 grams. Fecal samples and results are analyzed at the Dry Creek WRF Laboratory in with six hours of the holding time. The results of fecal samples in (MPN) and (percent solids) need to be analyzed in, *February, April, June, August, October, and December. **January, March, May, July, September and November; test for TS and VS. Class A test for Helminth ova density limits > 1 egg/4g TS; Enteric virus density limits of > 1 PFU/4g

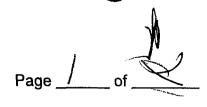
- 1. *' **Class A sludge < 1000 MPN/gram. (Test 12 times a year for TS and VS).
- 2. * Class B sludge < 2,000,000 MPN/gram
- 3. Percent solids, 75 % or better for Class A Biosolids and Class B Biosolids.
- 4. Chain of custody record

Zone: [] | Rows: 1 - 5 | Date: 1-3/-13 | Time: 10/20 | [] AM [] PM

Project Name: B1050/id5					
Location: Dry Creek WRF.					
Address: 8911 CampstoolRd,					
City: Cheyenne State: Ly Zip Code: 82007.					
City: Cheyenne State: Ly Zip Code: 82007. Samples Collected by: Chet Bandell. [Date/Time: 1-3/-13//0/2014m]					
Analytical Certification					
This certification must be completed by the Analytical Laboratory performing service for the Cheyenne Board of Public Utilities and submitted with each "Analytical Report.					
"I certify that these analysis and resulting report (s) were prepared under my direction and supervision in accordance with a system designed to assure that qualified personal properly analyze all samples and accurately report the results. I certify that all analysis were performed in accordance with method approved for wastewater under the latest revision to 40 CFR Part 503 Sludge Regulation. Based on my inquiry of the person or persons who manage the system, or those person directly responsible for analyzing, the wastewater samples and generating the report (s), the analysis, report, and information submitted is to the best on my knowledge and belief, true, accurate, and completed."					
Name of Laboratory: Dry Creek WRF.					
Address: 89/1 Cam pstool Rd					
City: Cheyenne State: Wy Zip Code: 82009.					
Name of Analyst:					
This Certification is signed by:					
Date: 62813 Time: 6880 AM [] PM					

Cheyenne Board of Public Utilities Water Reclamation Laboratory





Client's Name:	CHEEK U	ر کیات Conta	act Name: <u>/</u>	het		y hi				Name (if o	ther than Contact):_	
Report Required I				Number of	ANAL	YSIS F	EQUE	STED		Sample	Other	Analysis
13:0501	16			Containers Sample Type					Preserved	<u>Type</u>	Information	Completed
1) 1070 1			A AMERICA	AWSVBO			1 1					
-2ahe	2 n Row	5 1-	5	<u>A</u> ir <u>W</u> ater					HNO ₃ H ₂ SO ₄	Grab or	(pH, Field Analysis, etc.)	Yes / No (Lab use only)
Zone D Rows 1-5				Soils/Solids Vegetation					4°C HCL	Composite		
SAMPLE IDEN (Name, Loca		Collection Date	Collection Time	<u>B</u> ioassay <u>O</u> ther MATRIX	To b				None			,
120n0D	Rowl	1-31	9130 AM	1 Hazir. Barn					WH	Grub		24
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7				<u> </u>								
Custody	Relinquished by:			Date/Time:	7	R	eceived	by:				Date/Time:
Record <u>MUST</u> be	(kut il	and w/		16:00								
Signed	Sample Disposal:	Return to				lisposal					Log#	558
	m4 13 /1/6	1059		D	. 44 :	, i	, /	1 /	- SAA 72			

Copies to:

White - Book in Laboratory

Yellow - Laboratory Hard Copy

Pink - Client

Attachment: #4. Dry Creek Water Reclamation Facility

F. Pathogen reduction is accomplished through anaerobic digestion. The primary and secondary digested sludge is treated in the absence of air for mean cell residence time and temperature between 25 and 35 days at 92 to 100 degrees Fahrenheit. Air dried sludge is obtained with a tractor aerator on paved drying beds and on site unpaved storage area in windrows that are turned approximately once a month dependant on the weather conditions.

The Biosolids production (dry weight) at the Dry Creek WRF is over 1500 metric tons a year. Therefore samples are collected six times a year (February, April, May, June, August, October, and December). The laboratories analyze the dry samples for metals, nutrients, organics pathogens, volatile solids and total solids.

CERTIFICATION STATEMENT

I certify under the penalty of law, that the pathogen requirements in Part I.C.3, the management practices in Part I.D (if necessary) (including the practice in part I. D.13 if the table 4 annual pollutant limits are used) and the site restrictions in Part I.C.2 (if necessary) have been met. This determination has been made under my direction and supervision in accordance with the system designed to assure that qualified personnel properly gather and evaluate the information used to determine that pathogen requirements, the vector attraction reduction requirements, the management practices and the site restrictions have been met. I am significant penalties aware that there are for false certification including the possibility of imprisonment.

Signature

Jim Waughes, Manager

Water Reclamation Division

Attachment: #5. Dry Creek Water Reclamation Facility

G. Vector attraction reduction requirements are met through anaerobic digestion when there is thirty eight percent or more reduction in volatile solids. Volatile solids destruction is measured weight by volume average ((Vol. Solids Reduction = VS in - VS out / (VS in -((VS in * VS out)) (Use Average). The sludge is also air dried in windrows for further vector attraction reduction. The dry solids in windrows are between 65% to 80% total volatile solids reduction before land application.

RE: Flows From: Primary North and Primary South Raw sludge Average: Total solids (change % to Mg/l (10000) (NRS & SRS): Total Vol Solids (NRS & SRS): Total C-2 (wasting) cake flow gal: C-1 (digested) Solids (mg/L) cake: C-1 Vol solids cake (mg/L): C-2 solids cake (mg/L): C-2 Vol Solids cake (mg/L) Cake flow from Rotary Drum Thicker to digester.

CERTIFICATION STATEMENT

I certify under the penalty of law, that the pathogen requirements in Part I.C.2, one of the vector attraction reduction alternatives in Part I.C.3, the management practices in part I.D (if necessary) (including practices in Part I.D.13 if the table 4 annual pollutant limits are used) and the site restrictions in part I.C.2 (if necessary) have been met. This determination has been made under my direction and supervision in accordance with information used to determine that the requirements, the vector attraction reduction requirements, the management practices and the site restrictions have been met. I am aware that there are significant penalties for false certification including the possibility imprisonment.

Signature

Jim Hughes, Manager

Water Reclamation Division

Attachment: #6. Dry Creek Water Reclamation Facility

H. Best management practices are accomplished by applying biosolids at a whole sludge application rate that is less than or equal to the agronomic rate for the specific site and plant species. The Biosolids are applied so that it does not adversely affect a threatened or endangered species.

Biosolids are not dispersed on sites that are flooded or snow covered, frozen ground with a slope of three percent or more to prevent run off into wetland or surface water. A buffer zone of thirty-five feet from waterways, stock wells, and surface water is observed. Biosolids land applications are prohibited to sites where the available phosphorous content of the existing soil exceeds 400 pounds per acre.

Stored Biosolids on the plant facility remain in windrows for two years or less. The Biosolids are land applied in the winter, spring and fall of the year, weather permitting. Biosolids and soil are analytically tested before disposal. Cheyenne's sludge management practice ensures compliance with both Federal and State parameters and provides for long term Biosolids procedures with little or no detriment to the environment, while enhancing the native grass and field crop production of those participating ranchers and farmers who utilize Biosolids as a fertilizer supplement and soil conditioner.

CERTIFICATION STATEMENT

I certify under the penalty of law that the pathogen requirements in Part I.C.2, one of the vector attraction I.C.3, reduction alternatives in Part the management practices in part I.D (if necessary) (including in the practices in Part I.D.13 if the table 4 annual pollutant limits are used) and the site restrictions in Part I.C.2 (if necessary) have been met. This determination has been made under my direction and supervision in accordance with the system designed to assure that qualified personal properly gather and evaluate the information used to determine that the pathogen requirements, the management practices and the site restrictions have been met. I am aware that there are significant penalties for false certification including the possibility of imprisonment.

Signature

Jim Hughes, Manager

Water Reclamation Division

Attachment: #7.

Dry Creek Water Reclamation Facility

I. Site restrictions are first achieved through the quality of sewage sludge product which has been stabilized to reduce pathogenic organisms, which has been dried to a solids concentration of sixty percentile or greater and contains no hazardous or toxic compounds or chemicals in concentrations which exceed those authorized by the USA EPA REGION VIII and WYOMING DEQ for land application in Part C.1, Specific Limitations and Self Monitoring Requirements and Chemical Pollutant Limitations.

The dry sludge that is produced is class \underline{A} and \underline{B} which are applied primarily to range land. Before applying sewage sludge on rangeland, pastureland, farm land, or fields, soil samples have been collected and have had the appropriate soil analysis conducted.

The <u>Class B</u> Sludge with respect to pathogens has been in compliance with the entire site restrictions listed in Part I.C.2. No sludge or material derived from sludge exceeds the limits in Table 3 Part I.C.1. The <u>Class A</u> pathogen reduction limits in Part I.C.2 meets the first 4 vector attraction reduction alternatives in Part I.C.3. There are sufficient management practices used to prevent malfunctions and deterioration, operator errors and discharges which may cause or lead to the release of sludge to the environment, a threat to human health or a nuisance.

CERTIFICATION STATEMENT

I certify under the penalty of law, that the pathogen requirements in Part I.C.2, one of the vector attraction reduction alternatives in Part I.C.3, the management practices in Part I.D (if necessary) including the practice in Part I.D.13 if the table 4 annual pollutant limits are used) and the site restrictions in Part I.C.2 (if necessary) have been met. This determination has been made under my direction and supervision in accordance with the system designed to assure that qualified personnel properly gather and evaluate the information used to determine that the pathogen requirements, the vector attractions reduction requirements, the management practices and the restrictions have been met. I am aware that there are significant penalties for false certification including the possibility of imprisonment.

Signature |

Jim Hughes, Manager



ANALYTICAL RESULTS

DRY CREEK WWTP LABORATORY

Cheyenne BOPU 8911 Campstool Road Cheyenne, Wyoming 82007 Phone: 307-635-3163 Fax: 307-635-6833

Fax: 30/-035-083

Date Sampled: 01/31/13 Date Received: 01/31/13

Sample Location: Zone E

Sample Matrix: Compost

Sampled By: CB

Date Reported: 03/04/13
Date Fecal Analyzed: NA

Date Solids Analyzed: 02/06/13

Analyst(s): mw

EPA Method/Total Solids: SM 19th Ed 2540B EPA Method/Volatile Solids: SM 19th Ed 2540E

EPA Method/Fecal Coliform: SM 18th Ed 9221E (A-1 Media)

Fecal Coliform/

Row#	Total Solids %	Volatile Solids%	Dry Gram Sludge
1	82.0	45.0	NA
2	83.5	46.2	NA ·
3	88.3	38.2	NA
4	83.8	44.6	NA
5	80.7	48.3	NA
6	88.2	42.4	NA
7	87.7	40.9	NA
8	83.4	43.6	NA
9	89.6	45.6	NA
10	87.2	45.7	NA

Comments:

All data meets QA/QC requirements; please see QA/QC files in Dry Creek Laboratory. NA = Not Analyzed

Kent Loader, Laboratory Supervisor

Date:

Dry Creek WRF Laboratory For TS & VS

Identification Reporting: No. WYSL - 22934

Permit No. WYG - <u>650002</u>

(Cheyenne BOPU) Dry Creek Water Reclamation Facility

Samples and Analytical

Quality Assurance/Quality Control OA/QC

Date: 1-31-13 | Time: 10120 | [[AM/]] PM

Analytical Sampling Records (Cheyenne BOPU) Dry Creek WRF Laboratory

[] Dates and time of samples collected
[] Sampling location documented
[] Sampling types appropriate
[] Sampling volumes recorded
[] Name of person sampling
[] Types of sampling containers
[] Methods of preservation
[] Sampling quality assurance/ quality control QA/QC available
[] Pollutant limits red flagged if over mg/kg (Table 1,2,3,4 and Section 503.13) (Class A and B Biosolids)
[] Certification statement signed with each laboratory analytical report:
1. Pathogen reduction
2. Vector attraction reduction operates at Dry Creek WRF analysis samples. Results from daily sheets and results, recorded daily.
3. Management Practices
4. Site restrictions
[] Class A sludge: average temperature, (volatile solids percent) and total solids Dry sludge) once a month. Turn rows once a month, weather permitting.
[] Chain of custody recorded
Date: 1-31-13 Time: 10'21 [] AM 1] PM

Analytical Records From: (Cheyenne BOPU) Dry Creek WRF To: (Cheyenne BOPU) Dry Creek WRF Laboratory

[] Date and time of samples analysis
[] Name of analyst
[] All analyses are reported on dry weight basis
[] Dry Creek WRF Laboratory 8911 Campstool Rd. Cheyenne, WY 82007 Ph: 307-635-3163 Fax: 307-635-6833
[] Analytical quality assurance/quality control (QA/QC) available
[] Analytical results available
[] Chain of custody record

Date: 1-3/- 13 | Time: 10170 | [] AM [] PM

Analytical Records From: (Cheyenne BOPU) Dry Creek WRF To: (Cheyenne BOPU) Dry Creek WRF Laboratory

	Date and time of sample
[]	Name of analyst
	Analytical methods used
[]	Analyses and calculation results properly documented or verified
	All analysis are reported on dry weight basis with the exception of volatile solids or total solids in percent. (1quart plastic bag 450 grams) (7 quart plastic bags 3150 grams).
[]	Volatile solids and total solids samples need to be analyzed six times a year for Class B Biosolids and 12 times a year for Class A Biosolids.
	Analytical quality assurance/quality control (QA/QC) available
	Analytical results available
[]	Chain of custody record

Zone: F | Rows: | - 10 | Date: 1-31-13 | Time: 10120 | [] AM | PM

Analytical Sample Containers From: (Cheyenne BOPU) Dry Creek WRF To: (Cheyenne BOPU) Dry Creek WRF Laboratory

Dry Sludge for fecal results in MPN, and percent solids for Class A or Class B Biosolids. 1 quart Plastic bags 450 grams: 7 Quart Plastic bags total of 3150 grams. Fecal samples and results are analyzed at the Dry Creek WRF Laboratory in with six hours of the holding time. The results of fecal samples in (MPN) and (percent solids) need to be analyzed in, *February, April, June, August, October, and December. **January, March, May, July, September and November; test for TS and VS. Class A test for Helminth ova density limits > 1 egg/4g TS; Enteric virus density limits of > 1 PFU/4g

- 1. *' **Class A sludge < 1000 MPN/gram. (Test 12 times a year for TS and VS).
- 2. * Class B sludge < 2,000,000 MPN/gram
- 3. Percent solids, 75 % or better for Class A Biosolids and Class B Biosolids.
- 4. Chain of custody record

Zone: $\boxed{}$ Rows: $\boxed{}$ - $\boxed{}$ Date: $\boxed{}$ Time: $\boxed{}$ Time: $\boxed{}$ $\boxed{}$ PM

Project Name: 35050 1il 5					
Location: Dry Creek WRF.					
Address: 8911 Camp Stool Rd.					
City: Cheyenne State: Luy Zip Code: 82007.					
City: Cheyenne State: Ly Zip Code: 82007. Samples Collected by: Chut Barber. [Date/Time: 1-31-1.3/10/20 4n					
Analytical Certification					
This certification must be completed by the Analytical Laboratory performing service for the Cheyenne Board of Public Utilities and submitted with each "Analytical Report.					
"I certify that these analysis and resulting report (s) were prepared under my direction and supervision in accordance with a system designed to assure that qualified personal properly analyze all samples and accurately report the results. I certify that all analysis were performed in accordance with method approved for wastewater under the latest revision to 40 CFR Part 503 Sludge Regulation. Based on my inquiry of the person or persons who manage the system, or those person directly responsible for analyzing, the wastewater samples and generating the report (s), the analysis, report, and information submitted is to the best on my knowledge and belief, true, accurate, and completed."					
Name of Laboratory: Dry Creek LURI-					
Address: 8911 Campstoc/Rd.					
City: Cheyenne State: Wy Zip Code: 82007					
Name of Analyst:					
This Certification is signed by:					
Date: (0-78-1) Time: 6800 JAM [] PM					

Cheyenne Board of Public Utilities Water Reclamation Laboratory

Chain of Custody and Analytical Request Record
PLEASE PRINT CLEARLY, provide as much information as possible

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Page	of

Client's Name:	14 Caron	Lu Cont	act Name: <u>/</u>	that I	eubel	/			s	ampler's I	Name (if o	ther than Contact):_	
Report Required	eport Required For: 1,10501,16 2008 E Rows 1-7				Number of Containers Sample Type A W S V B O Air Water Soils/Solids Yegetation Bioassay					How Preserved HNO3 H ₂ SO4 4°C HCL None	Sample <u>Type</u> Grab or Composite	Information (pH, Field Analysis, etc.)	Analysis <u>Completed</u> Yes / No (Lab use only)
	NTIFICATION cation, etc.)	Collection Date	Collection Time	Other MATRIX	1914					None			, ,
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Signed	Sample Disposal:	Return t	o client:			isposal						Log#	559
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Co	pies to: Wh	ite - Book	in Labor	atory	Yellov	v - La	orat	ory	Ha	rd Copy	/	Pink - Client	

Cheyenne Board of Public Utilities Water Reclamation Laboratory

Chain of Custody and Analytical Request Record PLEASE PRINT CLEARLY, provide as much information as possible



Client's Name: Dvy Cveek (ULF Contact Name	Let Bea	bel		Sampler's N	ame (if o	ther than Contact):_	
Report Required For: 1090 1:19 2000 E Ru		Number of Containers Sample Type A W S V B O Air Water Soils/Solids Vegetation Bioassay	LYSIS RE		Preserved HNO ₃ H ₂ SO ₄	Sample Type Grab or Composite	Other Information (pH, Field Analysis, etc.)	Analysis <u>Completed</u> Yes / No (Lab use only)
SAMPLE IDENTIFICATION (Name, Location, etc.)	Collection Collection Date Time							
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7		on Toping				Per Property		
Custody Record MUST be	while.	Date/Time: 13	:	eived by:				Date/Time:
Signed Sample Disposal:	Return to client:		disposal:				Log#	570

Copies to:

White - Book in Laboratory

Yellow - Laboratory Hard Copy

Pink - Client

Attachment: #4. Dry Creek Water Reclamation Facility

F. Pathogen reduction is accomplished through anaerobic digestion. The primary and secondary digested sludge is treated in the absence of air for mean cell residence time and temperature between 25 and 35 days at 92 to 100 degrees Fahrenheit. Air dried sludge is obtained with a tractor aerator on paved drying beds and on site unpaved storage area in windrows that are turned approximately once a month dependant on the weather conditions.

The Biosolids production (dry weight) at the Dry Creek WRF is over 1500 metric tons a year. Therefore samples are collected six times a year (February, April, May, June, August, October, and December). The laboratories analyze the dry samples for metals, nutrients, organics pathogens, volatile solids and total solids.

CERTIFICATION STATEMENT

I certify under the penalty of law, that the pathogen requirements in Part I.C.3, the management practices in Part I.D (if necessary) (including the practice in part I. D.13 if the table 4 annual pollutant limits are used) and the site restrictions in Part I.C.2 (if necessary) have been met. This determination has been made under my direction and supervision in accordance with the system designed to assure that qualified personnel properly gather and evaluate the information used to determine that pathogen requirements, the vector attraction reduction requirements, the management practices and the site restrictions have been met. I am aware that there are significant penalties for false certification including the possibility of imprisonment.

Signature

Jim Hughes, Manager

Water Reclamation Division

Attachment: #5. Dry Creek Water Reclamation Facility

G. Vector attraction reduction requirements are met through anaerobic digestion when there is thirty eight percent or more reduction in volatile solids. Volatile solids destruction is measured weight by volume average ((Vol. Solids Reduction = VS in - VS out / (VS in -((VS in * VS out)) (Use Average). The sludge is also air dried in windrows for further vector attraction reduction. The dry solids in windrows are between 65% to 80% total volatile solids reduction before land application.

RE: Flows From: Primary North and Primary South Raw sludge Average: Total solids (change % to Mg/l (10000) (NRS & SRS): Total Vol Solids (NRS & SRS): Total C-2 (wasting) cake flow gal: C-1 (digested) Solids (mg/L) cake: C-1 Vol solids cake (mg/L): C-2 solids cake (mg/L): C-2 Vol Solids cake (mg/L) Cake flow from Rotary Drum Thicker to digester.

CERTIFICATION STATEMENT

I certify under the penalty of law, that the pathogen requirements in Part I.C.2, one of the vector attraction alternatives in Part I.C.3, the management practices in part I.D (if necessary) (including practices in Part I.D.13 if the table 4 annual pollutant limits are used) and the site restrictions in part I.C.2 (if necessary) have been met. This determination has been made under my direction and supervision in accordance with information used to determine that the requirements, the vector attraction reduction requirements, the management practices and the site restrictions have been met. I am aware that there are significant penalties for false certification including the possibility imprisonment.

Signature

Jim Hughes, Manager

Water Reclamation Division

Attachment: #6. Dry Creek Water Reclamation Facility

H. Best management practices are accomplished by applying biosolids at a whole sludge application rate that is less than or equal to the agronomic rate for the specific site and plant species. The Biosolids are applied so that it does not adversely affect a threatened or endangered species.

Biosolids are not dispersed on sites that are flooded or snow covered, frozen ground with a slope of three percent or more to prevent run off into wetland or surface water. A buffer zone of thirty-five feet from waterways, stock wells, and surface water is observed. Biosolids land applications are prohibited to sites where the available phosphorous content of the existing soil exceeds 400 pounds per acre.

Stored Biosolids on the plant facility remain in windrows for two years or less. The Biosolids are land applied in the winter, spring and fall of the year, weather permitting. Biosolids and soil are analytically tested before disposal. Cheyenne's sludge management practice ensures compliance with both Federal and State parameters and provides for long term Biosolids procedures with little or no detriment to the environment, while enhancing the native grass and field crop production of those participating ranchers and farmers who utilize Biosolids as a fertilizer supplement and soil conditioner.

CERTIFICATION STATEMENT

I certify under the penalty of law that the pathogen requirements in Part I.C.2, one of the vector attraction reduction alternatives in Part I.C.3, the management practices in part I.D (if necessary) (including in the practices in Part I.D.13 if the table 4 annual pollutant limits are used) and the site restrictions in Part I.C.2 (if necessary) have been met. This determination has been made under my direction and supervision in accordance with the system designed to assure that qualified personal properly gather and evaluate the information used to determine that the pathogen requirements, the management practices and the site restrictions have been met. I am aware that there are significant penalties for false certification including the possibility of imprisonment.

Signature

Jim Hughes, Manager

Water Reclamation Division Attachment: #7.

Dry Creek Water Reclamation Facility

I. Site restrictions are first achieved through the quality of sewage sludge product which has been stabilized to reduce pathogenic organisms, which has been dried to a solids concentration of sixty percentile or greater and contains no hazardous or toxic compounds or chemicals in concentrations which exceed those authorized by the USA EPA REGION VIII and WYOMING DEQ for land application in Part C.1, Specific Limitations and Self Monitoring Requirements and Chemical Pollutant Limitations.

The dry sludge that is produced is class \underline{A} and \underline{B} which are applied primarily to range land. Before applying sewage sludge on rangeland, pastureland, farm land, or fields, soil samples have been collected and have had the appropriate soil analysis conducted.

The <u>Class B</u> Sludge with respect to pathogens has been in compliance with the entire site restrictions listed in Part I.C.2. No sludge or material derived from sludge exceeds the limits in Table 3 Part I.C.1. The <u>Class A</u> pathogen reduction limits in Part I.C.2 meets the first 4 vector attraction reduction alternatives in Part I.C.3. There are sufficient management practices used to prevent malfunctions and deterioration, operator errors and discharges which may cause or lead to the release of sludge to the environment, a threat to human health or a nuisance.

CERTIFICATION STATEMENT

I certify under the penalty of law, that the pathogen requirements in Part I.C.2, one of the vector attraction reduction alternatives in Part I.C.3, the management practices in Part I.D (if necessary) including the practice in Part I.D.13 if the table 4 annual pollutant limits are used) and the site restrictions in Part I.C.2 (if necessary) have been met. This determination has been made under my direction and supervision in accordance with the system designed to assure that qualified personnel properly gather and evaluate the information used to determine that the pathogen requirements, the vector attractions reduction requirements, the management the practices and restrictions have been met. I am aware that there are significant penalties for false certification including the possibility of imprisonment.

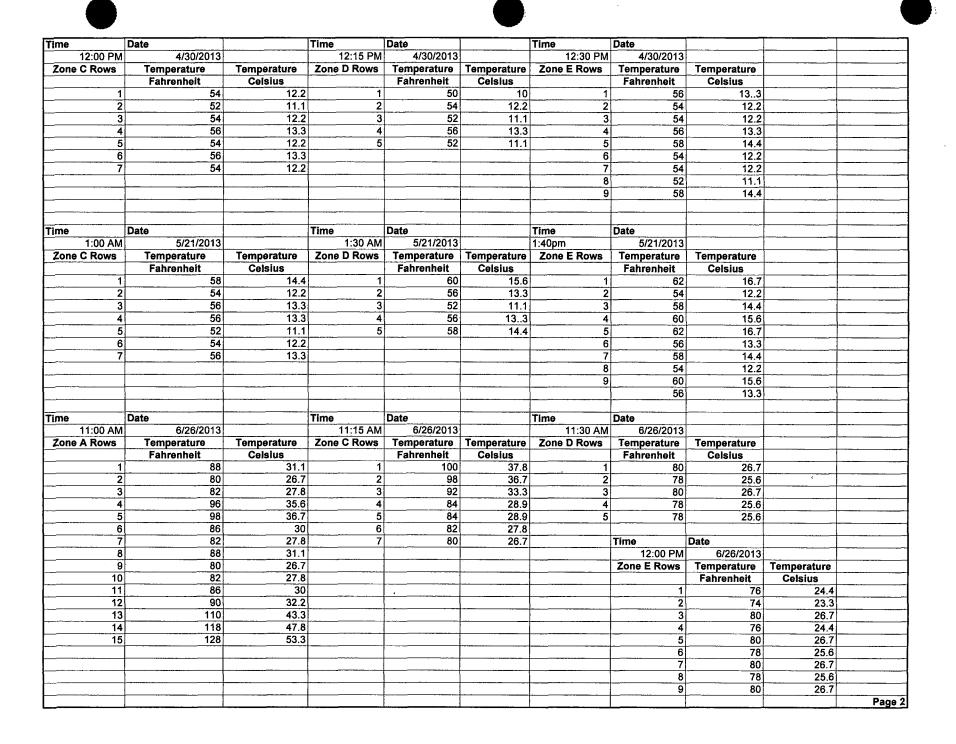
Signature |

Jim Hughes, Manager

ATTACHMENT: 11 DRY CREEK WRF DRY SLUDGE ROWS TEMPERATURE 2013

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2013 Zone Temp	erture									
Time	Date		Time	Date			Date			
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5		5.6	5					5.6		1
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7						7	40	4.4		
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	·					9	44	6.7		
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Zone C Rows	Temperature Fahrenheit	Temperature Celsius	ZONE D ROWS	Temperature Fahrenheit	Temperature Celsius	Zone E Rows	Temperature Fahrenheit	Temperature Celsius		+
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Time	Date		Time	Date		Time	Date			
2:00 PM	9/25/2013		2:20 PM	9/25/2013		2:40 PM	9/25/2013			
Zone A Rows	Temperature	Temperature	Zone C Rows	Temperature	Temperature		Temperature	Temperature		
	Fahrenheit	Celsius		Fahrenheit	Celsius		Fahrenheit	Celsius		
1		22.2	1			1		23.3		
2		20	2	74	23.3	2	70	21.1		1
	74	23.3	3			3	72	22.2		1
4		21.1	4	72		4				
	72	22.2	5	74	23.3	5		23.3		
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	Fahrenheit	Celsius		,						
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2	72	22.2								
		23.3							-	
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7	70	21.1		, ,						
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9	70	21.1								
Time	Date		Time	Date		Time	Date			
1:00 PM	10/28/2013		1:15 PM	10/28/2013		1:30 PM	10/28/2013			
Zone A Rows	Temperature	Temperature	Zone C Rows	Temperature	Temperature	Zone D Rows	Temperature	Temperature		
	Fahrenheit	Celsius		Fahrenheit	Celsius		Fahrenheit	Celsius		
1	52	11.1	1	56	13.3	1	54	12.2		
2		10	2	54	12.2	2	52	11.1		
3	54	12.2	3	54	12.2	3	56	13.3		
4	1	8.9	4	52	11.1	4		10		
		10	5	56		5	54	12.2		
6		7.8	6		12.2					
7		10	7	54	12.2					
8		12.2								
9	50	10	· · · · · · · · · · · · · · · · · · ·							
Time	Date									
1:45 PM							<u> </u>			
Zone E Rows	Temperature	Temperature								
	Fahrenheit	Celsius								
	52	11.1								
2		12.2								
3		11.1								
4		12.2								
		13.3								<u> </u>
6	52	11.1	-							ļ. <u>_</u>
 	<u> </u>				L.,					Page 4

Committee of the Commit

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Time	Date		Time	Date		Time	Date		
2:15 PM	11/26/2013		2:30 PM	11/26/2013		2:40 PM	11/26/2013		
Zone A Rows	Temperature	Temperature	Zone C Rows	Temperature	Temperature	Zone D Rows	Temperature	Temperature	
	Fahrenheit	Celsius		Fahrenheit	Celsius		Fahrenheit	Celsius	
1	42	5.6	1	38	3.3	1		4.4	
2	38	3.3	2	36	2.2	2	38	3.3	
3	40	4.4	3	34	1.1	3	42	5.6	
. 4		6.7	4		4.4	4	40	4.4	
5	40	4.4	5	40	4.4	5	50	10	
6		5.6	6		5.6				
7	40	4.4		42	5.6				
8		3.3							
9	42	5.6							
Time	Date								
3:00 PM									
Zone E Rows	Temperature	Temperature							
	Fahrenheit	Celsius							
1									
2	38								
3									
4									
5	40	**************************************							
					····				
Time	Date		Time	Date		Time	Date		
8:45 AM			8:55 AM			9:05			
Zone A Rows	Temperature	Temperature	Zone C Rows	Temperature	Temperature	Zone D Rows	Temperature	Temperature	
	Fahrenheit	Celsius		Fahrenheit	Celsius		Fahrenheit	Celsius	
1	36	2.2	1	32	0			0	
2 3	36 36	2.2	3		1.1	2	40	4.4	
3		2.2			1.1 2.2	3	32	0	
5		2.2 2.2	5			4 5	38 38	3.3	
6		1.1	9		1.1 1.1	5	38	3.3	
7		1.1	7		2.2				
8		1.1		30	2.2				
9		3.3							
	30								
Time	Date								
9:15 AM									
Zone E Rows	Temperature	Temperature						•	
	Fahrenheit	Celsius							
1	32	0							
2		1.1							
3	32	0							
4	36	2.2							
5	36	2.2							

Attachment: #4. Dry Creek Water Reclamation Facility

F. Pathogen reduction is accomplished through anaerobic digestion. The primary and secondary digested sludge is treated in the absence of air for mean cell residence time and temperature between 25 and 35 days at 92 to 100 degrees Fahrenheit. Air dried sludge is obtained with a tractor aerator on paved drying beds and on site unpaved storage area in windrows that are turned approximately once a month dependant on the weather conditions.

The Biosolids production (dry weight) at the Dry Creek WRF is over 1500 metric tons a year. Therefore samples are collected six times a year (February, April, May, June, August, October, and December). The laboratories analyze the dry samples for metals, nutrients, organics pathogens, volatile solids and total solids.

CERTIFICATION STATEMENT

I certify under the penalty of law, that the pathogen requirements in Part I.C.3, the management practices in Part I.D (if necessary) (including the practice in part I.D.13 if the table 4 annual pollutant limits are used) and the site restrictions in Part I.C.2 (if necessary) have been met. This determination has been made under my direction and supervision in accordance with the system designed to assure that qualified personnel properly gather and evaluate the information used to determine that pathogen requirements, the vector attraction reduction requirements, the management practices and the site restrictions have been met. I am aware that there are significant penalties for false certification including the possibility of imprisonment.

Signature

Jim Hughes, Manager

Water Reclamation Division

Attachment: #5. Dry Creek Water Reclamation Facility

G. Vector attraction reduction requirements are met through anaerobic digestion when there is thirty eight percent or more reduction in volatile solids. Volatile solids destruction is measured weight by volume average ((Vol. Solids Reduction = VS in - VS out / (VS in -((VS in * VS out)) (Use Average). The sludge is also air dried in windrows for further vector attraction reduction. The dry solids in windrows are between 65% to 80% total volatile solids reduction before land application.

RE: Flows From: Primary North and Primary South Raw sludge Average: Total solids (change % to Mg/l (10000) (NRS & SRS): Total Vol Solids (NRS & SRS): Total C-2 (wasting) cake flow gal: C-1 (digested) Solids (mg/L) cake: C-1 Vol solids cake (mg/L): C-2 solids cake (mg/L): C-2 Vol Solids cake (mg/L) Cake flow from Rotary Drum Thicker to digester.

CERTIFICATION STATEMENT

I certify under the penalty of law, that the pathogen requirements in Part I.C.2, one of the vector attraction in Part I.C.3, reduction alternatives the management in part I.D (if necessary) (including practices in Part I.D.13 if the table 4 annual pollutant limits are used) and the site restrictions in part I.C.2 (if necessary) have been met. This determination has been made under my direction and supervision in accordance with information used to determine that the requirements, the vector attraction reduction requirements, the management practices and the site restrictions have been met. I am aware that there are significant penalties for false certification possibility including the imprisonment.

Signature

Jim Hughes, Manager

Water Reclamation Division

Attachment: #6. Dry Creek Water Reclamation Facility

H. Best management practices are accomplished by applying biosolids at a whole sludge application rate that is less than or equal to the agronomic rate for the specific site and plant species. The Biosolids are applied so that it does not adversely affect a threatened or endangered species.

Biosolids are not dispersed on sites that are flooded or snow covered, frozen ground with a slope of three percent or more to prevent run off into wetland or surface water. A buffer zone of thirty-five feet from waterways, stock wells, and surface water is observed. Biosolids land applications are prohibited to sites where the available phosphorous content of the existing soil exceeds 400 pounds per acre.

Stored Biosolids on the plant facility remain in windrows for two years or less. The Biosolids are land applied in the winter, spring and fall of the year, weather permitting. Biosolids and soil are analytically tested before disposal. Cheyenne's sludge management practice ensures compliance with both Federal and State parameters and provides for long term Biosolids procedures with little or no detriment to the environment, while enhancing the native grass and field crop production of those participating ranchers and farmers who utilize Biosolids as a fertilizer supplement and soil conditioner.

CERTIFICATION STATEMENT

I certify under the penalty of law that the pathogen requirements in Part I.C.2, one of the vector attraction reduction alternatives I.C.3, in Part the management practices in part I.D (if necessary) (including in the practices in Part I.D.13 if the table 4 annual pollutant limits are used) and the site restrictions in Part I.C.2 (if necessary) have been met. This determination has been made under my direction and supervision in accordance with the system designed to assure that qualified personal properly gather and evaluate the information used to determine that the pathogen requirements, the management practices and the site restrictions have been met. I am aware that there are significant penalties for false certification including the possibility of imprisonment.

Signature

Jim Hughes, Manager

Water Reclamation Division Attachment: #7.

Dry Creek Water Reclamation Facility

I. Site restrictions are first achieved through the quality of sewage sludge product which has been stabilized to reduce pathogenic organisms, which has been dried to a solids concentration of sixty percentile or greater and contains no hazardous or toxic compounds or chemicals in concentrations which exceed those authorized by the USA EPA REGION VIII and WYOMING DEQ for land application in Part C.1, Specific Limitations and Self Monitoring Requirements and Chemical Pollutant Limitations.

The dry sludge that is produced is class A and B which are applied primarily to range land. Before applying sewage sludge on rangeland, pastureland, farm land, or fields, soil samples have been collected and have had the appropriate soil analysis conducted.

The Class B Sludge with respect to pathogens has been in compliance with the entire site restrictions listed in Part I.C.2. No sludge or material derived from sludge exceeds the limits in Table 3 Part I.C.1. The Class A pathogen reduction limits in Part I.C.2 meets the first 4 vector attraction reduction alternatives in Part I.C.3. There are sufficient management practices used to prevent malfunctions and deterioration, operator errors and discharges which may cause or lead to the release of sludge to the environment, a threat to human health or a nuisance.

CERTIFICATION STATEMENT

I certify under the penalty of law, that the pathogen requirements in Part I.C.2, one of the vector attraction in Part I.C.3, reduction alternatives the management practices in Part I.D (if necessary) including the practice in Part I.D.13 if the table 4 annual pollutant limits are used) and the site restrictions in Part I.C.2 (if necessary) have been met. This determination has been made under my direction and supervision in accordance with the system designed to assure that qualified personnel properly gather and evaluate the information used to determine that the pathogen requirements, the vector attractions reduction the requirements, the management practices and restrictions have been met. I am aware that there are significant penalties for false certification including the possibility of imprisonment.

Signature J Jim Hughes, Manager **ATTACHMENT: 13**

DRY CREEK WRF

TOTAL SOLIDS %

VOLATILE SOLIDS %

FECAL MPN/gm

(6 TIMES A YEAR)

2013



ANALYTICAL RESULTS

DRY CREEK WWTP LABORATORY

Cheyenne BOPU 8911 Campstool Road Cheyenne, Wyoming 82007 Phone: 307-635-3163 Fax: 307-635-6833

Date Sampled: 12/09/13

Date Received: 12/09/13

Sample Location: Zone E

Sample Matrix: Compost

Sampled By: CB

Date Reported: 12/19/13

Date Fecal Analyzed: 12/09/13 Date Solids Analyzed: 12/10/13

Analyst(s): mw

EPA Method/Total Solids:

SM 19th Ed 2540B

EPA Method/Volatile Solids: SM 19th Ed 2540E

EPA Method/Fecal Coliform: SM 18th Ed 9221E (A-1 Media)

Row #	Total Solids %	Volatile Solids%	Fecal Coliform/ Dry Gram Sludge
1	85.5	25.8	<380
2	82.0	35.1	<396
3	78.3	37.0	<414
4	75.7	36.4	<429
5	82.1	38.3	395

Comments:

All data meets QA/QC requirements; please see QA/QC files in Dry Creek Laboratory.

NA = Not Analyzed

Kent Loader, Laboratory Supervisor

Dry Creek WRF Laboratory For: Fecal, TS & VS

Identification Reporting: No. WYSL - 22934

Permit No. WYG - <u>650002</u>

(Cheyenne BOPU) Dry Creek Water Reclamation Facility

Samples and Analytical

Quality Assurance/Quality Control OA/QC

Date: 12-9-13 | Time: 165 | [] AM [] PM

Analytical Sampling Records (Cheyenne BOPU) Dry Creek WRF Laboratory

[] Dates and time of samples collected
[] Sampling location documented
[] Sampling types appropriate
[] Sampling volumes recorded
[] Name of person sampling
[] Types of sampling containers
[] Methods of preservation
[] Sampling quality assurance/ quality control QA/QC available
[] Pollutant limits red flagged if over mg/kg (Table 1,2,3,4 and Section 503.13) (Class A and B Biosolids)
[] Certification statement signed with each laboratory analytical report:
1. Pathogen reduction
2. Vector attraction reduction operates at Dry Creek WRF analysis samples. Results from daily sheets and results, recorded daily.
3. Management Practices
4. Site restrictions
[] Class A sludge: average temperature, (volatile solids percent) and total solids Dry sludge) once a month. Turn rows once a month, <u>weather permitting</u> .
[] Chain of custody recorded
Date: 12-9-13 Time: 1/5/5 [] AM [] PM

Analytical Records From: (Cheyenne BOPU) Dry Creek WRF To: (Cheyenne BOPU) Dry Creek WRF Laboratory

[] Date and time of samples analysis
[] Name of analyst
[] All analyses are reported on dry weight basis
[] Dry Creek WRF Laboratory 8911 Campstool Rd. Cheyenne, WY 82007 Ph: 307-635-3163 Fax: 307-635-6833
[] Analytical quality assurance/quality control (QA/QC) available
[] Analytical results available
[] Chain of custody record

Analytical Records From: (Cheyenne BOPU) Dry Creek WRF To: (Cheyenne BOPU) Dry Creek WRF Laboratory

[].	Date and time of sample
	Name of analyst
[] .	Analytical methods used
[]-	Analyses and calculation results properly documented or verified
	All analysis are reported on dry weight basis with the exception of volatile solids or total solids in percent. (1quart plastic bag 450 grams) (7 quart plastic bags 3150 grams).
0	Volatile solids and total solids samples need to be analyzed six times a year for Class B Biosolids and 12 times a year for Class A Biosolids.
[] 4	Analytical quality assurance/quality control (QA/QC) available
[] 4	Analytical results available
[] (Chain of custody record

Zone: F | Rows: | - 5 | Date: 12-9-13 | Time: 11:15 [] AM [] PM

Analytical Sample Containers From: (Cheyenne BOPU) Dry Creek WRF To: (Cheyenne BOPU) Dry Creek WRF Laboratory

Dry Sludge for fecal results in MPN, and percent solids for Class A or Class B Biosolids. 1 quart Plastic bags 450 grams: 7 Quart Plastic bags total of 3150 grams. Fecal samples and results are analyzed at the Dry Creek WRF Laboratory in with six hours of the holding time. The results of fecal samples in (MPN) and (percent solids) need to be analyzed in, *February, April, June, August, October, and December. **January, March, May, July, September and November; test for TS and VS. Class A test for Helminth ova density limits > 1 egg/4g TS; Enteric virus density limits of > 1 PFU/4g

- 1. *' **Class A sludge < 1000 MPN/gram. (Test 12 times a year for TS and VS).
- 2. * Class B sludge < 2,000,000 MPN/gram
- 3. Percent solids, 75 % or better for Class A Biosolids and Class B Biosolids.
- 4. Chain of custody record

Zone: F Rows: 1 - 6 Date: 12 - 9 - 13 Time: $11 \cdot 15$ [] AM [] PM

Project Name: B 1050 1125
Location: Dry Creek welf.
Address: 891/ Campstoul Rd.
City: Cheypny State: Wy Zip Code: 82007.
Samples Collected by: Chat Barbell Date/Time: 12-9-13/1/15.47
Analytical Certification
This certification must be completed by the Analytical Laboratory performing service for the Cheyenne Board of Public Utilities and submitted with each "Analytical Report.
"I certify that these analysis and resulting report (s) were prepared under my direction and supervision in accordance with a system designed to assure that qualified personal properly analyze all samples and accurately report the results. I certify that all analysis were performed in accordance with method approved for wastewater under the latest revision to 40 CFR Part 503 Sludge Regulation. Based of y inquiry of the person or persons who manage the system, or those person directly responsible for analyzing, the wastewater samples and generating the report (s), the analysis, report, and information submitted is to the best on my knowledge and belief, true, accurate, and completed."
Name of Laboratory: Dvy Cveet war.
Address: 8911 Camp Stool Rd.
City: Cheyenne State: Wy Zip Code: 82007.
Name of Analyst: feat boade. This Certification is signed by:
This Certification is signed by:
Date: 1-7-14] Time:] [] AM [] PM



Chain of Custody and Analytical Request Record
PLEASE PRINT CLEARLY, provide as much information as possible

Page		of/
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Client's Name:	1 Court 1	<u> </u>	act Name:	Alt	Ba	j).	del	<i>1</i>	Sampler's	Name (if o	ther than Contact):_	
Report Required F	or:13/05/11	16		Number of Containers	ANALYS	SIS R	EQUE	STED	How <u>Preserved</u>	Sample Type	Other Information	Analysis Completed
Report Required F	ER	W5-	1-5 -	Sample Type A W S V B O <u>Air W</u> ater <u>S</u> oils/ <u>S</u> olids <u>V</u> egetation <u>B</u> ioassay		V			HNO ₃ H ₂ SO ₄ 4°C HCL None	Grab or Composite	(pH, Field Analysis, etc.)	Yes / No (Lab use only)
SAMPLE IDEN (Name, Loca		Collection Date	Collection Time	<u>O</u> ther MATRIX	100 -	7						
12011 × E	Kowl	12-1	AM	1 ylasic		-			MA	9		
2	12					46.					·	
3	1 3											
4	1-7											
5	1'5	1		1	11.				1	10		
6			T Y									
7												
Custody Record MUST be	Relinquished by:	rt 14.	her.	Date/Time:	13,1	/ Re	eceived	by:		? \		Date/Time
Signed	Sample Disposal:	Return to		Downi	_ Lab dis				7 (* 1729)	. 7	Log#	770

Copies to:

White - Book in Laboratory

Yellow - Laboratory Hard Copy

Pink - Client

Attachment: #4. Dry Creek Water Reclamation Facility

F. Pathogen reduction is accomplished through anaerobic digestion. The primary and secondary digested sludge is treated in the absence of air for mean cell residence time and temperature between 25 and 35 days at 92 to 100 degrees Fahrenheit. Air dried sludge is obtained with a tractor aerator on paved drying beds and on site unpaved storage area in windrows that are turned approximately once a month dependant on the weather conditions.

The Biosolids production (dry weight) at the Dry Creek WRF is over 1500 metric tons a year. Therefore samples are collected six times a year (February, April, May, June, August, October, and December). The laboratories analyze the dry samples for metals, nutrients, organics pathogens, volatile solids and total solids.

CERTIFICATION STATEMENT

I certify under the penalty of law, that the pathogen requirements in Part I.C.3, the management practices in Part I.D (if necessary) (including the practice in part I. D.13 if the table 4 annual pollutant limits are used) and the site restrictions in Part I.C.2 (if necessary) have been met. This determination has been made under my direction and supervision in accordance with the system designed to assure that qualified personnel properly gather and evaluate the information used to determine that pathogen requirements, the vector attraction reduction requirements, the management practices and the site restrictions have been met. I am aware that there are significant penalties for false certification including the possibility of imprisonment.

Signature

Jim Wughes, Manager

Water Reclamation Division

Attachment: #5. Dry Creek Water Reclamation Facility

G. Vector attraction reduction requirements are met through anaerobic digestion when there is thirty eight percent or more reduction in volatile solids. Volatile solids destruction is measured weight by volume average ((Vol. Solids Reduction = VS in - VS out / (VS in -((VS in * VS out)) (Use Average). The sludge is also air dried in windrows for further vector attraction reduction. The dry solids in windrows are between 65% to 80% total volatile solids reduction before land application.

RE: Flows From: Primary North and Primary South Raw sludge Average: Total solids (change % to Mg/l (10000) (NRS & SRS): Total Vol Solids (NRS & SRS): Total C-2 (wasting) cake flow gal: C-1 (digested) Solids (mg/L) cake: C-1 Vol solids cake (mg/L): C-2 solids cake (mg/L): C-2 Vol Solids cake (mg/L) Cake flow from Rotary Drum Thicker to digester.

CERTIFICATION STATEMENT

I certify under the penalty of law, that the pathogen requirements in Part I.C.2, one of the vector attraction reduction alternatives in Part I.C.3, the management (if practices in part I.D necessary) (including practices in Part I.D.13 if the table 4 annual pollutant limits are used) and the site restrictions in part I.C.2 (if necessary) have been met. This determination has been made under my direction and supervision in accordance with information used to determine that the requirements, the vector attraction reduction requirements, the management practices and the site restrictions have been met. I am aware that there are significant penalties for certification including possibility false the imprisonment.

Signature

Jim Hughes, Manager

Water Reclamation Division

H. Best management practices are accomplished by applying biosolids at a whole sludge application rate that is less than or equal to the agronomic rate for the specific site and plant species. The Biosolids are applied so that it does not adversely affect a threatened or endangered species.

Biosolids are not dispersed on sites that are flooded or snow covered, frozen ground with a slope of three percent or more to prevent run off into wetland or surface water. A buffer zone of thirty-five feet from waterways, stock wells, and surface water is observed. Biosolids land applications are prohibited to sites where the available phosphorous content of the existing soil exceeds 400 pounds per acre.

Stored Biosolids on the plant facility remain in windrows for two years or less. The Biosolids are land applied in the winter, spring and fall of the year, weather permitting. Biosolids and soil are analytically tested before disposal. Cheyenne's sludge management practice ensures compliance with both Federal and State parameters and provides for long term Biosolids procedures with little or no detriment to the environment, while enhancing the native grass and field crop production of those participating ranchers and farmers who utilize Biosolids as a fertilizer supplement and soil conditioner.

CERTIFICATION STATEMENT

I certify under the penalty of law that the pathogen requirements in Part I.C.2, one of the vector attraction reduction alternatives in Part I.C.3, the management practices in part I.D (if necessary) (including in the practices in Part I.D.13 if the table 4 annual pollutant limits are used) and the site restrictions in Part I.C.2 (if necessary) have been met. This determination has been made under my direction and supervision in accordance with the system designed to assure that qualified personal properly gather and evaluate the information used to determine that the pathogen requirements, the management practices and the site restrictions have been met. I am aware that there are significant penalties for false certification including the possibility of imprisonment.

Signature

Jim Hughes, Manager

Water Reclamation Division

Attachment: #7.

Dry Creek Water Reclamation Facility

I. Site restrictions are first achieved through the quality of sewage sludge product which has been stabilized to reduce pathogenic organisms, which has been dried to a solids concentration of sixty percentile or greater and contains no hazardous or toxic compounds or chemicals in concentrations which exceed those authorized by the USA EPA REGION VIII and WYOMING DEQ for land application in Part C.1, Specific Limitations and Self Monitoring Requirements and Chemical Pollutant Limitations.

The dry sludge that is produced is class \underline{A} and \underline{B} which are applied primarily to range land. Before applying sewage sludge on rangeland, pastureland, farm land, or fields, soil samples have been collected and have had the appropriate soil analysis conducted.

The <u>Class B</u> Sludge with respect to pathogens has been in compliance with the entire site restrictions listed in Part I.C.2. No sludge or material derived from sludge exceeds the limits in Table 3 Part I.C.1. The <u>Class A</u> pathogen reduction limits in Part I.C.2 meets the first 4 vector attraction reduction alternatives in Part I.C.3. There are sufficient management practices used to prevent malfunctions and deterioration, operator errors and discharges which may cause or lead to the release of sludge to the environment, a threat to human health or a nuisance.

CERTIFICATION STATEMENT

I certify under the penalty of law, that the pathogen requirements in Part I.C.2, one of the vector attraction reduction alternatives in Part I.C.3, the management practices in Part I.D (if necessary) including the practice in Part I.D.13 if the table 4 annual pollutant limits are used) and the site restrictions in Part I.C.2 (if necessary) have been met. This determination has been made under my direction and supervision in accordance with the system designed to assure that qualified personnel properly gather and evaluate the information used to determine that the pathogen requirements, the vector attractions reduction requirements, the management practices and the restrictions have been met. I am aware that there are significant penalties for false certification including the possibility of imprisonment.

Signature J Jim Hughes, Manager



ANALYTICAL RESULTS

DRY CREEK WWTP LABORATORY

Cheyenne BOPU 8911 Campstool Road Cheyenne, Wyoming 82007 Phone: 307-635-3163 Fax: 307-635-6833

Date Sampled: 12/09/13

Date Received: 12/09/13

Sample Location: Zone D Sample Matrix: Compost

Sampled By: CB

Date Reported: 12/19/13

Date Fecal Analyzed: 12/09/13 Date Solids Analyzed: 12/10/13

Analyst(s): mw

EPA Method/Total Solids:

SM 19th Ed 2540B

EPA Method/Volatile Solids: SM 19th Ed 2540E

EPA Method/Fecal Coliform: SM 18th Ed 9221E (A-1 Media)

Row #	Total Solids %	Volatile Solids%	Fecal Coliform/ Dry Gram Sludge		
1	83.1	41.0	<391		
2	82.4	41.8	<395		
3	80.7	47.8	<402		
4	79.7	43.3	<408		
5	83.5	34.0	<432		

Comments:

All data meets QA/QC requirements; please see QA/QC files in Dry Creek Laboratory. NA = Not Analyzed

Kent Loader, Laboratory Supervisor

Dry Creek WRF Laboratory For: Fecal, TS & VS

Identification Reporting: No. WYSL - 22934

Permit No. WYG - 650002

(Cheyenne BOPU) Dry Creek Water Reclamation Facility

Samples and Analytical

Quality Assurance/Quality Control OA/QC

Date: 12-9-13 Time: 15 [] AM[] PM

Analytical Sampling Records (Cheyenne BOPU) Dry Creek WRF Laboratory

[] Dates and time of samples collected
[] Sampling location documented
[] Sampling types appropriate
[] Sampling volumes recorded
[] Name of person sampling
[] Types of sampling containers
[] Methods of preservation
[] Sampling quality assurance/ quality control QA/QC available
[] Pollutant limits red flagged if over mg/kg (Table 1,2,3,4 and Section 503.13) (Class A and B Biosolids)
[] Certification statement signed with each laboratory analytical report:
1. Pathogen reduction
2. Vector attraction reduction operates at Dry Creek WRF analysis samples. Results from daily sheets and results, recorded daily.
3. Management Practices
4. Site restrictions
[] Class A sludge: average temperature, (volatile solids percent) and total solids Dry sludge) once a month. Turn rows once a month, weather permitting.
[] Chain of custody recorded
Date: $\sqrt{\lambda} - 9^{-13}$ Time: $\sqrt{\frac{15}{15}}$ []AM/[] PM

Analytical Records From: (Cheyenne BOPU) Dry Creek WRF To: (Cheyenne BOPU) Dry Creek WRF Laboratory

Date and time of samples analysis
[] Name of analyst
[] All analyses are reported on dry weight basis
[] Dry Creek WRF Laboratory 8911 Campstool Rd. Cheyenne, WY 82007 Ph: 307-635-3163 Fax: 307-635-6833
[] Analytical quality assurance/quality control (QA/QC) available
[] Analytical results available
Chain of custody record

Analytical Records From: (Cheyenne BOPU) Dry Creek WRF To: (Cheyenne BOPU) Dry Creek WRF Laboratory

[] Date and tim	e of sample
[] Name of ana	lyst
[] Analytical m	ethods used
[] Analyses and	l calculation results properly documented or verified
	are reported on dry weight basis with the exception of volatile solids s in percent. (1quart plastic bag 450 grams) (7 quart plastic bags
	ls and total solids samples need to be analyzed six times a year for solids and 12 times a year for Class A Biosolids.
[] Analytical qu	uality assurance/quality control (QA/QC) available
[] Analytical re	sults available
[] Chain of cus	tody record

Zone: $\sqrt{\frac{5}{1}}$ Rows: $\sqrt{\frac{5}{1}}$ Date: $\sqrt{\frac{3}{1}}$ Time: $\sqrt{\frac{5}{1}}$ [] $\sqrt{\frac{6}{1}}$ [] PM

Analytical Sample Containers From: (Cheyenne BOPU) Dry Creek WRF To: (Cheyenne BOPU) Dry Creek WRF Laboratory

Dry Sludge for fecal results in MPN, and percent solids for Class A or Class B Biosolids. 1 quart Plastic bags 450 grams: 7 Quart Plastic bags total of 3150 grams. Fecal samples and results are analyzed at the Dry Creek WRF Laboratory in with six hours of the holding time. The results of fecal samples in (MPN) and (percent solids) need to be analyzed in, *February, April, June, August, October, and December. **January, March, May, July, September and November; test for TS and VS. Class A test for Helminth ova density limits > 1 egg/4g TS; Enteric virus density limits of > 1 PFU/4g

- 1. *' **Class A sludge < 1000 MPN/gram. (Test 12 times a year for TS and VS).
- 2. * Class B sludge < 2,000,000 MPN/gram
- 3. Percent solids, 75 % or better for Class A Biosolids and Class B Biosolids.
- 4. Chain of custody record

Zone:]] Rows: / - 5 Date: // -9-/3 | Time: //[5] [] AM [] PM

Project Name: 6/050/id5
Location: Dry Creek WRF.
Address: 7911 Camps tow/
y ,
City: Cheyenne State: [] Zip Code: 82007. Samples Collected by Chit Burbell .[Date/Time:] -9-13/11/15 Hy
Analytical Certification
This certification must be completed by the Analytical Laboratory performing service for the Cheyenne Board of Public Utilities and submitted with each "Analytical Report.
"I certify that these analysis and resulting report (s) were prepared under my direction and supervision in accordance with a system designed to assure that qualified personal properly analyze all samples and accurately report the results. I certify that all analysis were performed in accordance with method approved for wastewater under the latest revision to 40 CFR Part 503 Sludge Regulation. Based on my inquiry of the person or persons who manage the system, or those person directly responsible for analyzing, the wastewater samples and generating the report (s), the analysis, report, and information submitted is to the best on my knowledge and belief, true, accurate, and completed."
Name of Laboratory: Dry Creek wat.
Address: 8911 Camps Toul Rd.
City: Cheyenne State: Wy Zip Code: 8207.
Name of Analyst: font Loader.
This Certification is signed by:
Date: /-7- / \ Time: / AM\ PM



Chain of Custody and Analytical Request Record
PLEASE PRINT CLEARLY, provide as much information as possible

Page		of <u></u>
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Client's Name:	CHUYKU	<u> </u>	act Name:_		134	/ J.	أمريار	/		Sampler's I	Name (if o	ther than Contact):_	
Report Required F	or:13:0011	16		Number of Containers Sample Type	ANAL	YSIS	REC	JUES.	1	How Preserved	Sample <u>Type</u>	Other <u>Information</u>	Analysis <u>Completed</u>
2000	y Rou	,5 / -	· 	A W S V B O Air <u>W</u> ater Soils/Solids Vegetation Bioassay	cal ma	V				HNO₃ H₂SO₄ 4°C HCL None	Grab or Composite	(pH, Field Analysis, etc.)	Yes / No (Lab use only)
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120NP /) Row 1	12-13	PM	1865 C						1414	9		
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3	3												
4	1												
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6													
7			4										
Custody Record <u>MUST</u> be	Relinquished by:	IT 1/4	will	Date/Time:	ISAL	/ /	Rece	eived by					Date/Time: 13
Signed	Sample Disposal:	Return to			Lab			£				Log#	759
	1D# (/ y 5	<i>[}</i>	27911	Permi	t# [11	$\sqrt{\zeta}$	ده. نست میو	65	400 2			*

Copies to:

White - Book in Laboratory

Yellow - Laboratory Hard Copy

Pink - Client



ANALYTICAL RESULTS

DRY CREEK WWTP LABORATORY

Cheyenne BOPU 8911 Campstool Road Cheyenne, Wyoming 82007 Phone: 307-635-3163 Fax: 307-635-6833

Date Sampled: 12/09/13

Date Received: 12/09/13

Sample Location: Zone C Sample Matrix: Compost Sampled By: CB

Date Reported: 12/19/13

Date Fecal Analyzed: 12/09/13 Date Solids Analyzed: 12/10/13

Analyst(s): mw

EPA Method/Total Solids:

SM 19th Ed 2540B

EPA Method/Volatile Solids: SM 19th Ed 2540E

EPA Method/Fecal Coliform: SM 18th Ed 9221E (A-1 Media)

Row #	Total Solids %	Volatile Solids%	Fecal Coliform/ Dry Gram Sludge
1	64.2	36.2	<506 ·
2	70.8	36.7	<459
3	70.4	31.7	<461
4	68.9	43.1	2,147
5	63.6	45.7	<511
6	71.4	44.4	<455
7	79.3	44.8	<410

Comments:

All data meets QA/QC requirements; please see QA/QC files in Dry Creek Laboratory. NA = Not Analyzed

Kent Loader Laboratory Supervisor

Page 1 of 1

Dry Creek WRF Laboratory For: Fecal, TS & VS

Identification Reporting: No. WYSL - 22934

Permit No. WYG - <u>650002</u>

(Cheyenne BOPU) Dry Creek Water Reclamation Facility

Samples and Analytical

Quality Assurance/Quality Control OA/QC

Date: 12-9-13 Time: 11.75 [] AM [] PM

Analytical Sampling Records (Cheyenne BOPU) Dry Creek WRF Laboratory

[] Dates and time of samples collected
[] Sampling location documented
[] Sampling types appropriate
[] Sampling volumes recorded
[] Name of person sampling
[] Types of sampling containers
[] Methods of preservation
[] Sampling quality assurance/ quality control QA/QC available
[] Pollutant limits red flagged if over mg/kg (Table 1,2,3,4 and Section 503.13) (Class A and B Biosolids)
[] Certification statement signed with each laboratory analytical report:
1. Pathogen reduction
2. Vector attraction reduction operates at Dry Creek WRF analysis samples. Results from daily sheets and results, recorded daily.
3. Management Practices
4. Site restrictions
[] Class A sludge: average temperature, (volatile solids percent) and total solids Dry sludge) once a month. Turn rows once a month, <u>weather permitting</u> .
[] Chain of custody recorded
Date: $\sqrt{2-9-13}$ Time: $\sqrt{\frac{1}{5}}$ [] \overrightarrow{AM} [] PM

Analytical Records From: (Cheyenne BOPU) Dry Creek WRF To: (Cheyenne BOPU) Dry Creek WRF Laboratory

[] Date and time of samples analysis
[] Name of analyst
[] All analyses are reported on dry weight basis
[] Dry Creek WRF Laboratory 8911 Campstool Rd. Cheyenne, WY 82007 Ph: 307-635-3163 Fax: 307-635-6833
[] Analytical quality assurance/quality control (QA/QC) available
[] Analytical results available
[] Chain of custody record

Analytical Records From: (Cheyenne BOPU) Dry Creek WRF To: (Cheyenne BOPU) Dry Creek WRF Laboratory

[] Date and time of sample
[] Name of analyst
[] Analytical methods used
[] Analyses and calculation results properly documented or verified
[] All analysis are reported on dry weight basis with the exception of volatile solids or total solids in percent. (1quart plastic bag 450 grams) (7 quart plastic bags 3150 grams).
[] Volatile solids and total solids samples need to be analyzed six times a year for Class B Biosolids and 12 times a year for Class A Biosolids.
[] Analytical quality assurance/quality control (QA/QC) available
[] Analytical results available
[] Chain of custody record

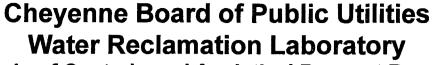
Zone: C Rows: $1 - \frac{7}{2}$ Date: $1 - \frac{7}{2}$ Time: $1 - \frac{7}{2}$ Time: $1 - \frac{7}{2}$ PM

Analytical Sample Containers From: (Cheyenne BOPU) Dry Creek WRF To: (Cheyenne BOPU) Dry Creek WRF Laboratory

Dry Sludge for fecal results in MPN, and percent solids for Class A or Class B Biosolids. 1 quart Plastic bags 450 grams: 7 Quart Plastic bags total of 3150 grams. Fecal samples and results are analyzed at the Dry Creek WRF Laboratory in with six hours of the holding time. The results of fecal samples in (MPN) and (percent solids) need to be analyzed in, *February, April, June, August, October, and December. **January, March, May, July, September and November; test for TS and VS. Class A test for Helminth ova density limits > 1 egg/4g TS; Enteric virus density limits of > 1 PFU/4g

- 1. *' **Class A sludge < 1000 MPN/gram. (Test 12 times a year for TS and VS).
- 2. * Class B sludge < 2,000,000 MPN/gram
- 3. Percent solids, 75 % or better for Class A Biosolids and Class B Biosolids.
- 4. Chain of custody record

Project Name: B1050 1id 5
Location: Dry Creek WRF.
Address: 8911 Campstool Rd.
City: Cheyenne State: [] Zip Code: 82007.
City: Cheyenne State: [] Zip Code: 82007. Samples Collected by: Chet Bould: [Date/Time:] 2-9-13/11:15 This
Analytical Certification
This certification must be completed by the Analytical Laboratory performing service for the Cheyenne Board of Public Utilities and submitted with each "Analytical Report.
"I certify that these analysis and resulting report (s) were prepared under my direction and supervision in accordance with a system designed to assure that qualified personal properly analyze all samples and accurately report the results. I certify that all analysis were performed in accordance with method approved for wastewater under the latest revision to 40 CFR Part 503 Sludge Regulation. Based on my inquiry of the person or persons who manage the system, or those person directly responsible for analyzing, the wastewater samples and generating the report (s), the analysis, report, and information submitted is to the best on my knowledge and belief, true, accurate, and completed."
Name of Laboratory: Bibbolist Dry Creek will.
Address: 89 11 Camps root Rd
City: Cheyenne State: Wy Zip Code: \$2007.
Name of Analyst: feut Local.
Name of Analyst:
$oldsymbol{\iota}$
Date: /-7- / 4



Chain of Custody and Analytical Request Record
PLEASE PRINT CLEARLY, provide as much information as possible

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Client's Name: Day Creek (U)	RE Contact	Name:	7.24 /					Sampler's I	Name (if o	ther than Contact):_	
Report Required For: 19.0019	15			ANALYS	IS R	EQUEST		How	Sample	Other	Analysis
Diagram of the second of the s			Containers Sample Type	21/2				Preserved	<u>Туре</u>	Information	Completed
Zire C Rows 1.	- /		AWSVBO	20				HNO₃	Grab	(pH, Field Analysis,	Yes / No
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		■	<u>V</u> egetation	3 12	,			4 °C HCL	Composite		
SAMPLE IDENTIFICATION	Collection C	ollection	<u>B</u> ioassay	OB	1			None			
(Name, Location, etc.)	Date	Time	<u>O</u> ther MATRIX							 	
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Record MUST be	<u>.</u>		11:14	AM	1	11/16	ل	\mathcal{W}_{-}			11508
Signed Sample Disposal:	Return to cli			_ Lab dis			7	6000		Log# .	758

Copies to:

White - Book in Laboratory

Yellow - Laboratory Hard Copy

Pink - Client

Attachment: #4. Dry Creek Water Reclamation Facility

F. Pathogen reduction is accomplished through anaerobic digestion. The primary and secondary digested sludge is treated in the absence of air for mean cell residence time and temperature between 25 and 35 days at 92 to 100 degrees Fahrenheit. Air dried sludge is obtained with a tractor aerator on paved drying beds and on site unpaved storage area in windrows that are turned approximately once a month dependant on the weather conditions.

The Biosolids production (dry weight) at the Dry Creek WRF is over 1500 metric tons a year. Therefore samples are collected six times a year (February, April, May, June, August, October, and December). The laboratories analyze the dry samples for metals, nutrients, organics pathogens, volatile solids and total solids.

CERTIFICATION STATEMENT

I certify under the penalty of law, that the pathogen requirements in Part I.C.3, the management practices in Part I.D (if necessary) (including the practice in part I.D.13 if the table 4 annual pollutant limits are used) and the site restrictions in Part I.C.2 (if necessary) have been met. This determination has been made under my direction and supervision in accordance with the system designed to assure that qualified personnel properly gather and evaluate the information used to determine that pathogen requirements, the vector attraction reduction requirements, the management practices and the site restrictions have been met. I am aware that there are significant penalties for false certification including the possibility of imprisonment.

Signature

Jim Hughes, Manager

Water Reclamation Division

Attachment: #5. Dry Creek Water Reclamation Facility

G. Vector attraction reduction requirements are met through anaerobic digestion when there is thirty eight percent or more reduction in volatile solids. Volatile solids destruction is measured weight by volume average ((Vol. Solids Reduction = VS in - VS out / (VS in -((VS in * VS out)) (Use Average). The sludge is also air dried in windrows for further vector attraction reduction. The dry solids in windrows are between 65% to 80% total volatile solids reduction before land application.

RE: Flows From: Primary North and Primary South Raw sludge Average: Total solids (change % to Mg/l (10000) (NRS & SRS): Total Vol Solids (NRS & SRS): Total C-2 (wasting) cake flow gal: C-1 (digested) Solids (mg/L) cake: C-1 Vol solids cake (mg/L): C-2 solids cake (mg/L): C-2 Vol Solids cake (mg/L) Cake flow from Rotary Drum Thicker to digester.

CERTIFICATION STATEMENT

I certify under the penalty of law, that the pathogen requirements in Part I.C.2, one of the vector attraction alternatives in Part reduction I.C.3, the management practices in part I.D (if necessary) (including practices in Part I.D.13 if the table 4 annual pollutant limits are used) and the site restrictions in part I.C.2 (if necessary) have been met. This determination has been made under my direction and supervision in accordance with information used to determine that the requirements, the vector attraction reduction requirements, the management practices and the site restrictions have been met. I am aware that there are significant penalties for false certification including the possibility imprisonment.

Signature

Jim Hughes, Manager

Water Reclamation Division

Attachment: #6. Dry Creek Water Reclamation Facility

H. Best management practices are accomplished by applying biosolids at a whole sludge application rate that is less than or equal to the agronomic rate for the specific site and plant species. The Biosolids are applied so that it does not adversely affect a threatened or endangered species.

Biosolids are not dispersed on sites that are flooded or snow covered, frozen ground with a slope of three percent or more to prevent run off into wetland or surface water. A buffer zone of thirty-five feet from waterways, stock wells, and surface water is observed. Biosolids land applications are prohibited to sites where the available phosphorous content of the existing soil exceeds 400 pounds per acre.

Stored Biosolids on the plant facility remain in windrows for two years or less. The Biosolids are land applied in the winter, spring and fall of the year, weather permitting. Biosolids and soil are analytically tested before disposal. Cheyenne's sludge management practice ensures compliance with both Federal and State parameters and provides for long term Biosolids procedures with little or no detriment to the environment, while enhancing the native grass and field crop production of those participating ranchers and farmers who utilize Biosolids as a fertilizer supplement and soil conditioner.

CERTIFICATION STATEMENT

I certify under the penalty of law that the pathogen requirements in Part I.C.2, one of the vector attraction reduction alternatives in Part I.C.3, the management practices in part I.D (if necessary) (including in the practices in Part I.D.13 if the table 4 annual pollutant limits are used) and the site restrictions in Part I.C.2 (if necessary) have been met. This determination has been made under my direction and supervision in accordance with the system designed to assure that qualified personal properly gather and evaluate the information used to determine that the pathogen requirements, the management practices and the site restrictions have been met. I am aware that there are significant penalties for false certification including the possibility of imprisonment.

Signature

Jim Hughes, Manager

Water Reclamation Division

Attachment: #7.

Dry Creek Water Reclamation Facility

I. Site restrictions are first achieved through the quality of sewage sludge product which has been stabilized to reduce pathogenic organisms, which has been dried to a solids concentration of sixty percentile or greater and contains no hazardous or toxic compounds or chemicals in concentrations which exceed those authorized by the USA EPA REGION VIII and WYOMING DEQ for land application in Part C.1, Specific Limitations and Self Monitoring Requirements and Chemical Pollutant Limitations.

The dry sludge that is produced is class A and B which are applied primarily to range land. Before applying sewage sludge on rangeland, pastureland, farm land, or fields, soil samples have been collected and have had the appropriate soil analysis conducted.

The <u>Class B</u> Sludge with respect to pathogens has been in compliance with the entire site restrictions listed in Part I.C.2. No sludge or material derived from sludge exceeds the limits in Table 3 Part I.C.1. The <u>Class A</u> pathogen reduction limits in Part I.C.2 meets the first 4 vector attraction reduction alternatives in Part I.C.3. There are sufficient management practices used to prevent malfunctions and deterioration, operator errors and discharges which may cause or lead to the release of sludge to the environment, a threat to human health or a nuisance.

CERTIFICATION STATEMENT

I certify under the penalty of law, that the pathogen requirements in Part I.C.2, one of the vector attraction reduction alternatives in Part I.C.3, the management practices in Part I.D (if necessary) including the practice in Part I.D.13 if the table 4 annual pollutant limits are used) and the site restrictions in Part I.C.2 (if necessary) have been met. This determination has been made under my direction and supervision in accordance with the system designed to assure that qualified personnel properly gather and evaluate the information used to determine that the pathogen requirements, the vector attractions reduction requirements, the management practices and the restrictions have been met. I am aware that there are significant penalties for false certification including the possibility of imprisonment.

Signature

Jim Hughes, Manager



ANALYTICAL RESULTS

DRY CREEK WWTP LABORATORY

Cheyenne BOPU 8911 Campstool Road Cheyenne, Wyoming 82007 Phone: 307-635-3163

Fax: 307-635-6833

Date Sampled: 12/09/13

Date Received: 12/09/13

Sample Location: Zone A Sample Matrix: Compost

Sampled By: CB

Date Reported: 12/19/13

Date Fecal Analyzed: 12/09/13 Date Solids Analyzed: 12/10/13

Analyst(s): mw

EPA Method/Total Solids:

SM 19th Ed 2540B

EPA Method/Volatile Solids: SM 19th Ed 2540E

EPA Method/Fecal Coliform: SM 18th Ed 9221E (A-1 Media)

Fecal Coliform/

Row #	Total Solids %	Volatile Solids %	Dry Gram Sludge
1	71.8	22.9	<453
2	72.1	24.4	<451 ·
3	74.3	30.9	<438
4	69.2	40.0	<470
5	69.1	30.9	<470
6	77.1	31.5	<421
7	78.3	44.0	<414
8	66.9	42.8	<486
9	67.4	45.5	<482

Comments:

All data meets QA/QC requirements; please see QA/QC files in Dry Creek Laboratory.

NA = Not Analyzed

Kent Loader, Laboratory Supervisor

Dry Creek WRF Laboratory For: Fecal, TS & VS

Identification Reporting: No. WYSL - 22934

Permit No. WYG - <u>650002</u>

(Cheyenne BOPU) Dry Creek Water Reclamation Facility

Samples and Analytical

Quality Assurance/Quality Control OA/QC

Date: 1/2 - 9 - 13 | Time: 1/i/5 | [] AM [] PM

Analytical Sampling Records (Chevenne BOPU) Dry Creek WRF Laboratory

[] Dates and time of samples collected
[] Sampling location documented
[] Sampling types appropriate
[] Sampling volumes recorded
[] Name of person sampling
[] Types of sampling containers
[] Methods of preservation
[] Sampling quality assurance/ quality control QA/QC available
[] Pollutant limits red flagged if over mg/kg (Table 1,2,3,4 and Section 503.13) (Class A and B Biosolids)
[] Certification statement signed with each laboratory analytical report:
1. Pathogen reduction
2. Vector attraction reduction operates at Dry Creek WRF analysis samples. Results from daily sheets and results, recorded daily.
3. Management Practices
4. Site restrictions
[] Class A sludge: average temperature, (volatile solids percent) and total solids Dry sludge) once a month. Turn rows once a month, <u>weather permitting</u> .
[] Chain of custody recorded
Date: /2-9-13 Time: //:/5 [AM] P

Analytical Records From: (Cheyenne BOPU) Dry Creek WRF To: (Cheyenne BOPU) Dry Creek WRF Laboratory

[] Date and time of samples analysis
[] Name of analyst
[] All analyses are reported on dry weight basis
[] Dry Creek WRF Laboratory 8911 Campstool Rd. Cheyenne, WY 82007 Ph: 307-635-3163 Fax: 307-635-6833
[] Analytical quality assurance/quality control (QA/QC) available
[] Analytical results available
[] Chain of custody record

Analytical Records From: (Cheyenne BOPU) Dry Creek WRF To: (Cheyenne BOPU) Dry Creek WRF Laboratory

[] Date and time of sample
[] Name of analyst
[] Analytical methods used
[] Analyses and calculation results properly documented or verified
[] All analysis are reported on dry weight basis with the exception of volatile solids or total solids in percent. (1quart plastic bag 450 grams) (7 quart plastic bags 3150 grams).
[] Volatile solids and total solids samples need to be analyzed six times a year for Class B Biosolids and 12 times a year for Class A Biosolids.
[] Analytical quality assurance/quality control (QA/QC) available
[] Analytical results available
[] Chain of custody record

Zone: A Rows: 1 - 9 Date: 12 - 9 - 13 Time: 11 - 19 [] AM [] PM

Analytical Sample Containers From: (Cheyenne BOPU) Dry Creek WRF To: (Cheyenne BOPU) Dry Creek WRF Laboratory

Dry Sludge for fecal results in MPN, and percent solids for Class A or Class B Biosolids. 1 quart Plastic bags 450 grams: 7 Quart Plastic bags total of 3150 grams. Fecal samples and results are analyzed at the Dry Creek WRF Laboratory in with six hours of the holding time. The results of fecal samples in (MPN) and (percent solids) need to be analyzed in, *February, April, June, August, October, and December. **January, March, May, July, September and November; test for TS and VS. Class A test for Helminth ova density limits > 1 egg/4g TS; Enteric virus density limits of > 1 PFU/4g

- 1. *' **Class A sludge < 1000 MPN/gram. (Test 12 times a year for TS and VS).
- 2. * Class B sludge < 2,000,000 MPN/gram
- 3. Percent solids, 75 % or better for Class A Biosolids and Class B Biosolids.
- 4. Chain of custody record

Zone: A Rows: 1 - 9 Date: 12 - 9 - 13 Time: 16 - 16 [] AM [] PM

Project Name: Biosolide
Location: Dry Creek WRF.
Address: 8911 Cam 15toul Rd.
City: Cheyenne State: WV Zip Code: 8200 7.
City: Cheyenne State: WV Zip Code: 8200 7. Samples Collected by: Cheffeull. [Date/Time: 12-9-13/1/:15 Av.)
Analytical Certification
This certification must be completed by the Analytical Laboratory performing service for the Cheyenne Board of Public Utilities and submitted with each "Analytical Report.
"I certify that these analysis and resulting report (s) were prepared under my direction and supervision in accordance with a system designed to assure that qualified personal properly analyze all samples and accurately report the results. I certify that all analysis were performed in accordance with method approved for wastewater under the latest revision to 40 CFR Part 503 Sludge Regulation. Based on my inquiry of the person or persons who manage the system, or those person directly responsible for analyzing, the wastewater samples and generating the report (s), the analysis, report, and information submitted is to the best on my knowledge and belief, true, accurate, and completed."
Name of Laboratory: Dry Creek WRF.
Address: 8911 Camp 57001 al
City: Cheyenne State: Cy Zip Code: 82007.
Name of Analyst: Kont Logd.
This Certification is signed by:
Date: (-7-/4 Time: [] AM)(PM

Cheyenne Board of Public Utilities Water Reclamation Laboratory

Chain of Custody and Analytical Request Record ... PLEASE PRINT CLEARLY, provide as much information as possible

Page ____ of ____

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Client's Name:	Со	ntact Name:_						Sampler's	Name (if o	ther than Contact):_	
Report Required For: B10501, 15 Z0102 A R		-]	Number of Containers Sample Type		/SIS	RE	QUESTE	How Preserved	Sample <u>Type</u>	Other <u>Information</u>	Analysis <u>Completed</u>
			A W S V B O Air Water Soils/Solids Yegetation Bioassay	177				HNO ₃ H ₂ SO ₄ 4°C HCL None	Grab or Composite	(pH, Field Analysis, etc.)	Yes / No (Lab use only)
SAMPLE IDENTIFICATION (Name, Location, etc.)	ON Collection Date	Collection Time	<u>O</u> ther MATRIX	匹と	7						
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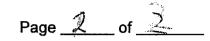
Copies to:

White - Book in Laboratory

Yellow - Laboratory Hard Copy

Pink - Client

Cheyenne Board Public Utilities **Water Reclamation Laboratory**



Chain of Custody and Analytical Request Record PLEASE PRINT CLEARLY, provide as much information as possible

Client's Name: Over with the Contact Name: Of the Bound Sampler's Name (if other than Contact):														
Report Required F	16 w 2 3 -	(4) 11 = 1		Number of Containers Sample Type A W S V B O Air <u>W</u> ater <u>S</u> oils/ <u>S</u> olids <u>V</u> egetation <u>B</u> ioassay	1000	` l	SIS F	REQU	EST	1	How Preserved HNO ₃ H ₂ SO ₄ 4°C HCL None	Sample <u>Type</u> Grab or Composite	Other Information (pH, Field Analysis, etc.)	Analysis Completed Yes / No (Lab use only)
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Copies to:

White - Book in Laboratory

Yellow - Laboratory Hard Copy

Pink - Client

Attachment: #4. Dry Creek Water Reclamation Facility

F. Pathogen reduction is accomplished through anaerobic digestion. The primary and secondary digested sludge is treated in the absence of air for mean cell residence time and temperature between 25 and 35 days at 92 to 100 degrees Fahrenheit. Air dried sludge is obtained with a tractor aerator on paved drying beds and on site unpaved storage area in windrows that are turned approximately once a month dependant on the weather conditions.

The Biosolids production (dry weight) at the Dry Creek WRF is over 1500 metric tons a year. Therefore samples are collected six times a year (February, April, May, June, August, October, and December). The laboratories analyze the dry samples for metals, nutrients, organics pathogens, volatile solids and total solids.

CERTIFICATION STATEMENT

I certify under the penalty of law, that the pathogen requirements in Part I.C.3, the management practices in Part I.D (if necessary) (including the practice in part I.D.13 if the table 4 annual pollutant limits are used) and the site restrictions in Part I.C.2 (if necessary) have been met. This determination has been made under my direction and supervision in accordance with the system designed to assure that qualified personnel properly gather and evaluate the information used to determine that pathogen requirements, the vector attraction reduction requirements, the management practices and the site restrictions have been met. I am aware that there are significant penalties for false certification including the possibility of imprisonment.

Signature

Jim Hughes, Manager

Water Reclamation Division

Attachment: #5. Dry Creek Water Reclamation Facility

G. Vector attraction reduction requirements are met through anaerobic digestion when there is thirty eight percent or more reduction in volatile solids. Volatile solids destruction is measured weight by volume average ((Vol. Solids Reduction = VS in - VS out / (VS in -((VS in * VS out)) (Use Average). The sludge is also air dried in windrows for further vector attraction reduction. The dry solids in windrows are between 65% to 80% total volatile solids reduction before land application.

RE: Flows From: Primary North and Primary South Raw sludge Average: Total solids (change % to Mg/l (10000) (NRS & SRS): Total Vol Solids (NRS & SRS): Total C-2 (wasting) cake flow gal: C-1 (digested) Solids (mg/L) cake: C-1 Vol solids cake (mg/L): C-2 solids cake (mg/L): C-2 Vol Solids cake (mg/L) Cake flow from Rotary Drum Thicker to digester.

CERTIFICATION STATEMENT

I certify under the penalty of law, that the pathogen requirements in Part I.C.2, one of the vector attraction reduction alternatives in Part I.C.3, the management (if necessary) practices in part I.D (including practices in Part I.D.13 if the table 4 annual pollutant limits are used) and the site restrictions in part I.C.2 (if necessary) have been met. This determination has been made under my direction and supervision in accordance with information used to determine that the requirements, the vector attraction reduction requirements, the management practices and the site restrictions have been met. I am aware that there are significant penalties for false certification including possibility the imprisonment.

Signature

Jim Hughes, Manager

Water Reclamation Division

H. Best management practices are accomplished by applying biosolids at a whole sludge application rate that is less than or equal to the agronomic rate for the specific site and plant species. The Biosolids are applied so that it does not adversely affect a threatened or endangered species.

Biosolids are not dispersed on sites that are flooded or snow covered, frozen ground with a slope of three percent or more to prevent run off into wetland or surface water. A buffer zone of thirty-five feet from waterways, stock wells, and surface water is observed. Biosolids land applications are prohibited to sites where the available phosphorous content of the existing soil exceeds 400 pounds per acre.

Stored Biosolids on the plant facility remain in windrows for two years or less. The Biosolids are land applied in the winter, spring and fall of the year, weather permitting. Biosolids and soil are analytically tested before disposal. Cheyenne's sludge management practice ensures compliance with both Federal and State parameters and provides for long term Biosolids procedures with little or no detriment to the environment, while enhancing the native grass and field crop production of those participating ranchers and farmers who utilize Biosolids as a fertilizer supplement and soil conditioner.

CERTIFICATION STATEMENT

I certify under the penalty of law that the pathogen requirements in Part I.C.2, one of the vector attraction reduction alternatives in Part I.C.3, the management practices in part I.D (if necessary) (including in the practices in Part I.D.13 if the table 4 annual pollutant limits are used) and the site restrictions in Part I.C.2 (if necessary) have been met. This determination has been made under my direction and supervision in accordance with the system designed to assure that qualified personal properly gather and evaluate the information used to determine that the pathogen requirements, the management practices and the site restrictions have been met. I am aware that there are significant penalties for false certification including the possibility of imprisonment.

Signature

Jim Hughes, Manager

Water Reclamation Division Attachment: #7.

Dry Creek Water Reclamation Facility

I. Site restrictions are first achieved through the quality of sewage sludge product which has been stabilized to reduce pathogenic organisms, which has been dried to a solids concentration of sixty percentile or greater and contains no hazardous or toxic compounds or chemicals in concentrations which exceed those authorized by the USA EPA REGION VIII and WYOMING DEQ for land application in Part C.1, Specific Limitations and Self Monitoring Requirements and Chemical Pollutant Limitations.

The dry sludge that is produced is class A and B which are applied primarily to range land. Before applying sewage sludge on rangeland, pastureland, farm land, or fields, soil samples have been collected and have had the appropriate soil analysis conducted.

The <u>Class B</u> Sludge with respect to pathogens has been in compliance with the entire site restrictions listed in Part I.C.2. No sludge or material derived from sludge exceeds the limits in Table 3 Part I.C.1. The <u>Class A</u> pathogen reduction limits in Part I.C.2 meets the first 4 vector attraction reduction alternatives in Part I.C.3. There are sufficient management practices used to prevent malfunctions and deterioration, operator errors and discharges which may cause or lead to the release of sludge to the environment, a threat to human health or a nuisance.

CERTIFICATION STATEMENT

I certify under the penalty of law, that the pathogen requirements in Part I.C.2, one of the vector attraction reduction alternatives in Part I.C.3, the management practices in Part I.D (if necessary) including the practice in Part I.D.13 if the table 4 annual pollutant limits are used) and the site restrictions in Part I.C.2 (if necessary) have been met. This determination has been made under my direction and supervision in accordance with the system designed to assure that qualified personnel properly gather and evaluate the information used to determine that the pathogen requirements, the vector attractions reduction requirements, the management practices and the restrictions have been met. I am aware that there are significant penalties for false certification including the possibility of imprisonment.

Signature Jim Hughes, Ma

Jim()Hughes, Manager



ANALYTICAL RESULTS

DRY CREEK WWTP LABORATORY

Cheyenne BOPU 8911 Campstool Road Cheyenne, Wyoming 82007 Phone: 307-635-3163 Fax: 307-635-6833

Date Sampled: 10/15/13

Date Received: 10/15/13

Sample Location: Zone E Sample Matrix: Compost

Sampled By: CB

Date Reported: 10/29/13

Date Fecal Analyzed: 10/15/13 Date Solids Analyzed: 10/21/13

Analyst(s): mw

EPA Method/Total Solids:

SM 19th Ed 2540B

EPA Method/Volatile Solids: SM 19th Ed 2540E

EPA Method/Fecal Coliform: SM 18th Ed 9221E (A-1 Media)

Row #	Total Solids %	Volatile Solids%	Pecal Coliform/ Dry Gram Sludge
1	58.9	34.8	<551 ·
2	70.0	35.4	<463
3	60.5	35.8	<537
4	56.9	36.8	<571
5	59.6	36.1	<545
6	64.8	34.7	<501

Comments:

All data meets QA/QC requirements; please see QA/QC files in Dry Creek Laboratory.

NA ■ Not Analyzed

Kent Loader, Laboratory Supervisor

10.29.13

Date:

Dry Creek WRF Laboratory For: Fecal, TS & VS

Identification Reporting: No. WYSL - 22934

Permit No. WYG - 650002

(Cheyenne BOPU) Dry Creek Water Reclamation Facility

Samples and Analytical

Quality Assurance/Quality Control OA/QC

Date: 10-15-13 | Time: // (00 | []AM/[] PM

Analytical Sampling Records (Cheyenne BOPU) Dry Creek WRF Laboratory

[] Dates and time of samples collected
[] Sampling location documented
[] Sampling types appropriate
[] Sampling volumes recorded
[] Name of person sampling
[] Types of sampling containers
[] Methods of preservation
[] Sampling quality assurance/ quality control QA/QC available
[] Pollutant limits red flagged if over mg/kg (Table 1,2,3,4 and Section 503.13) (Class A and B Biosolids)
[] Certification statement signed with each laboratory analytical report:
1. Pathogen reduction
2. Vector attraction reduction operates at Dry Creek WRF analysis samples. Results from daily sheets and results, recorded daily.
3. Management Practices
4. Site restrictions
[] Class A sludge: average temperature, (volatile solids percent) and total solids Dry sludge) once a month. Turn rows once a month, <u>weather permitting</u> .
[] Chain of custody recorded
Date: 10-15-13 Time: 1/100 [] AM [] PM

Analytical Records From: (Cheyenne BOPU) Dry Creek WRF To: (Cheyenne BOPU) Dry Creek WRF Laboratory

[] Date and time of samples analysis
[] Name of analyst
[] All analyses are reported on dry weight basis
[] Dry Creek WRF Laboratory 8911 Campstool Rd. Cheyenne, WY 82007 Ph: 307-635-3163 Fax: 307-635-6833
[] Analytical quality assurance/quality control (QA/QC) available
[] Analytical results available
[] Chain of custody record

Analytical Records From: (Cheyenne BOPU) Dry Creek WRF To: (Cheyenne BOPU) Dry Creek WRF Laboratory

[] Date and time of sample
[] Name of analyst
[] Analytical methods used
[] Analyses and calculation results properly documented or verified
[] All analysis are reported on dry weight basis with the exception of volatile solids or total solids in percent. (1quart plastic bag 450 grams) (7 quart plastic bags 3150 grams).
[] Volatile solids and total solids samples need to be analyzed six times a year for Class B Biosolids and 12 times a year for Class A Biosolids.
[] Analytical quality assurance/quality control (QA/QC) available
[] Analytical results available
[] Chain of custody record

Zone: E Rows: 1 - 6 Date: 10-15-13 Time: 11:00 [] AM [] PM

Analytical Sample Containers From: (Cheyenne BOPU) Dry Creek WRF To: (Cheyenne BOPU) Dry Creek WRF Laboratory

Dry Sludge for fecal results in MPN, and percent solids for Class A or Class B Biosolids. 1 quart Plastic bags 450 grams: 7 Quart Plastic bags total of 3150 grams. Fecal samples and results are analyzed at the Dry Creek WRF Laboratory in with six hours of the holding time. The results of fecal samples in (MPN) and (percent solids) need to be analyzed in, *February, April, June, August, October, and December. **January, March, May, July, September and November; test for TS and VS. Class A test for Helminth ova density limits > 1 egg/4g TS; Enteric virus density limits of > 1 PFU/4g

- 1. *' **Class A sludge < 1000 MPN/gram. (Test 12 times a year for TS and VS).
- 2. * Class B sludge < 2,000,000 MPN/gram
- 3. Percent solids, 75 % or better for Class A Biosolids and Class B Biosolids.
- 4. Chain of custody record

Zone: \boxed{E} Rows: $\boxed{-6}$ Date: $\boxed{0-15-13}$ Time: $\boxed{1/(0)}$ [] \boxed{AM} [] PM

Project Name: B 1 050 1165
Location: Dry Creek WRF
Address: 8911 Campstool Rd.
City: Cheyenne State: Wy Zip Code: 82007.
City: Cheyenne State: Wy Zip Code: 82007. Samples Collected by: Chet Back Date/Time: 10-15-13/11/2004
Analytical Certification
This certification must be completed by the Analytical Laboratory performing service for the Cheyenne Board of Public Utilities and submitted with each "Analytical Report.
"I certify that these analysis and resulting report (s) were prepared under my direction and supervision in accordance with a system designed to assure that qualified personal properly analyze all samples and accurately report the results. I certify that all analysis were performed in accordance with method approved for wastewater under the latest revision to 40 CFR Part 503 Sludge Regulation. Based on my inquiry of the person or persons who manage the system, or those person directly responsible for analyzing, the wastewater samples and generating the report (s), the analysis, report, and information submitted is to the best on my knowledge and belief, true, accurate, and completed."
Name of Laboratory: Dry Creek WRF.
Address: 8911 Cam p5 1001 Rd.
City: Cheyenne State: Wy Zip Code: 82007.
Name of Analyst: Kent Loade . This Certification is signed by:
This Certification is signed by:
Date: 10-31-13 Time:



Chain of Custody and Analytical Request Record PLEASE PRINT CLEARLY, provide as much information as possible

	1		1
Page		of	

Client's Name: Device Name (if other than Contact):											
Report Required F	or: 13, 10, 10, 10, 10, 10, 10, 10, 10, 10, 10	と プラ		Number of Containers Sample Type A W S V B O Air <u>W</u> ater <u>S</u> oils/ <u>S</u> olids <u>V</u> egetation <u>B</u> ioassay	10110	SIS REQUE	STED	How Preserved HNO ₃ H ₂ SO ₄ 4°C HCL None	Sample Type Grab or Composite	Other <u>Information</u> (pH, Field Analysis, etc.)	Analysis Completed Yes / No (Lab use only)
SAMPLE IDEN (Name, Loca		Date	Collection Time	<u>O</u> ther MATRIX	11						
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Signed	Sample Disposal:	Return to	client:		_ Lab dis	posal:				Log#	759

Copies to:

White - Book in Laboratory

Yellow - Laboratory Hard Copy

Pink - Client

Attachment: #4. Dry Creek Water Reclamation Facility

F. Pathogen reduction is accomplished through anaerobic digestion. The primary and secondary digested sludge is treated in the absence of air for mean cell residence time and temperature between 25 and 35 days at 92 to 100 degrees Fahrenheit. Air dried sludge is obtained with a tractor aerator on paved drying beds and on site unpaved storage area in windrows that are turned approximately once a month dependant on the weather conditions.

The Biosolids production (dry weight) at the Dry Creek WRF is over 1500 metric tons a year. Therefore samples are collected six times a year (February, April, May, June, August, October, and December). The laboratories analyze the dry samples for metals, nutrients, organics pathogens, volatile solids and total solids.

CERTIFICATION STATEMENT

I certify under the penalty of law, that the pathogen requirements in Part I.C.3, the management practices in Part I.D (if necessary) (including the practice in part I. D.13 if the table 4 annual pollutant limits are used) and the site restrictions in Part I.C.2 (if necessary) have been met. This determination has been made under my direction and supervision in accordance with the system designed to assure that qualified personnel properly gather and evaluate the information used to determine that pathogen requirements, the vector attraction reduction requirements, the management practices and the site restrictions have been met. I am aware that there are significant penalties for false certification including the possibility of imprisonment.

Signature

Jim Hughes, Manager

Water Reclamation Division

Attachment: #5. Dry Creek Water Reclamation Facility

G. Vector attraction reduction requirements are met through anaerobic digestion when there is thirty eight percent or more reduction in volatile solids. Volatile solids destruction is measured weight by volume average ((Vol. Solids Reduction = VS in - VS out / (VS in -((VS in * VS out)) (Use Average). The sludge is also air dried in windrows for further vector attraction reduction. The dry solids in windrows are between 65% to 80% total volatile solids reduction before land application.

RE: Flows From: Primary North and Primary South Raw sludge Average: Total solids (change % to Mg/l (10000) (NRS & SRS): Total Vol Solids (NRS & SRS): Total C-2 (wasting) cake flow gal: C-1 (digested) Solids (mg/L) cake: C-1 Vol solids cake (mg/L): C-2 solids cake (mg/L): C-2 Vol Solids cake (mg/L) Cake flow from Rotary Drum Thicker to digester.

CERTIFICATION STATEMENT

I certify under the penalty of law, that the pathogen requirements in Part I.C.2, one of the vector attraction reduction alternatives in Part I.C.3, the management in part I.D (if necessary) (including practices in Part I.D.13 if the table 4 annual pollutant limits are used) and the site restrictions in part I.C.2 (if necessary) have been met. This determination has been made under my direction and supervision in accordance with information used to determine that the pathogen requirements, the vector attraction reduction requirements, the management practices and the site restrictions have been met. I am aware that there are significant penalties for false certification the possibility including imprisonment.

Signature

Jim Hughes, Manager

Water Reclamation Division

Attachment: #6. Dry Creek Water Reclamation Facility

H. Best management practices are accomplished by applying biosolids at a whole sludge application rate that is less than or equal to the agronomic rate for the specific site and plant species. The Biosolids are applied so that it does not adversely affect a threatened or endangered species.

Biosolids are not dispersed on sites that are flooded or snow covered, frozen ground with a slope of three percent or more to prevent run off into wetland or surface water. A buffer zone of thirty-five feet from waterways, stock wells, and surface water is observed. Biosolids land applications are prohibited to sites where the available phosphorous content of the existing soil exceeds 400 pounds per acre.

Stored Biosolids on the plant facility remain in windrows for two years or less. The Biosolids are land applied in the winter, spring and fall of the year, weather permitting. Biosolids and soil are analytically tested before disposal. Cheyenne's sludge management practice ensures compliance with both Federal and State parameters and provides for long term Biosolids procedures with little or no detriment to the environment, while enhancing the native grass and field crop production of those participating ranchers and farmers who utilize Biosolids as a fertilizer supplement and soil conditioner.

CERTIFICATION STATEMENT

I certify under the penalty of law that the pathogen requirements in Part I.C.2, one of the vector attraction reduction alternatives in Part I.C.3, the management practices in part I.D (if necessary) (including in the practices in Part I.D.13 if the table 4 annual pollutant limits are used) and the site restrictions in Part I.C.2 (if necessary) have been met. This determination has been made under my direction and supervision in accordance with the system designed to assure that qualified personal properly gather and evaluate the information used to determine that the pathogen requirements, the management practices and the site restrictions have been met. I am aware that there are significant penalties for false certification including the possibility of imprisonment.

Signature

Jim Hughes, Manager

Water Reclamation Division Attachment: #7.

Dry Creek Water Reclamation Facility

I. Site restrictions are first achieved through the quality of sewage sludge product which has been stabilized to reduce pathogenic organisms, which has been dried to a solids concentration of sixty percentile or greater and contains no hazardous or toxic compounds or chemicals in concentrations which exceed those authorized by the USA EPA REGION VIII and WYOMING DEQ for land application in Part C.1, Specific Limitations and Self Monitoring Requirements and Chemical Pollutant Limitations.

The dry sludge that is produced is class \underline{A} and \underline{B} which are applied primarily to range land. Before applying sewage sludge on rangeland, pastureland, farm land, or fields, soil samples have been collected and have had the appropriate soil analysis conducted.

The <u>Class B</u> Sludge with respect to pathogens has been in compliance with the entire site restrictions listed in Part I.C.2. No sludge or material derived from sludge exceeds the limits in Table 3 Part I.C.1. The <u>Class A</u> pathogen reduction limits in Part I.C.2 meets the first 4 vector attraction reduction alternatives in Part I.C.3. There are sufficient management practices used to prevent malfunctions and deterioration, operator errors and discharges which may cause or lead to the release of sludge to the environment, a threat to human health or a nuisance.

CERTIFICATION STATEMENT

I certify under the penalty of law, that the pathogen requirements in Part I.C.2, one of the vector attraction reduction alternatives in Part I.C.3, the management practices in Part I.D (if necessary) including the practice in Part I.D.13 if the table 4 annual pollutant limits are used) and the site restrictions in Part I.C.2 (if necessary) have been met. This determination has been made under my direction and supervision in accordance with the system designed to assure that qualified personnel properly gather and evaluate the information used to determine that the pathogen requirements, the vector attractions reduction requirements, the management practices and the restrictions have been met. I am aware that there are significant penalties for false certification including the possibility of imprisonment.

Signature /

Jim Hughes, Manager



ANALYTICAL RESULTS

DRY CREEK WWTP LABORATORY

Cheyenne BOPU 8911 Campstool Road Cheyenne, Wyoming 82007 Phone: 307-635-3163 Fax: 307-635-6833

Date Sampled: 10/14/13

Date Received: 10/14/13

Sample Location: Zone D

Sample Matrix: Compost

Sampled By: CB

Date Reported: 10/29/13

Date Fecal Analyzed: 10/14/13 Date Solids Analyzed: 10/21/13

Analyst(s): mw

EPA Method/Total Solids:

SM 19th Ed 2540B

EPA Method/Volatile Solids: SM 19th Ed 2540E

EPA Method/Fecal Coliform: SM 18th Ed 9221E (A-1 Media)

Row #	Total Solids %	Volatile Solids%	Dry Gram Sludge		
1	65.4	33.8	<497		
2	65.1	40.9	<499		
3	68.1	44.2	<477		
4	60.8	33.8	<535		
5	65.5	36.5	<495		

Comments:

All data meets QA/QC requirements; please see QA/QC files in Dry Creek Laboratory. NA = Not Analyzed

Cent Loader, Laboratory Supervisor

-29.13

Dry Creek WRF Laboratory For: Fecal, TS & VS

Identification Reporting: No. WYSL - 22934

Permit No. WYG - <u>650002</u>

(Chevenne BOPU) Dry Creek Water Reclamation Facility

Samples and Analytical

Quality Assurance/Quality Control OA/QC

Date: 10 - 14-13 | Time: 11 00 14 11 | ANV | PM

Analytical Sampling Records (Cheyenne BOPU) Dry Creek WRF Laboratory

[] Dates and time of samples collected
[] Sampling location documented
[] Sampling types appropriate
[] Sampling volumes recorded
[] Name of person sampling
[] Types of sampling containers
[] Methods of preservation
[] Sampling quality assurance/ quality control QA/QC available
[] Pollutant limits red flagged if over mg/kg (Table 1,2,3,4 and Section 503.13) (Class A and B Biosolids)
[] Certification statement signed with each laboratory analytical report:
1. Pathogen reduction
2. Vector attraction reduction operates at Dry Creek WRF analysis samples. Results from daily sheets and results, recorded daily.
3. Management Practices
4. Site restrictions
[] Class A sludge: average temperature, (volatile solids percent) and total solids Dry sludge) once a month. Turn rows once a month, <u>weather permitting</u> .
[] Chain of custody recorded
Date: $10-14-13$ Time: $1/(00)$ [] $1/(00)$ PM

Analytical Records From: (Cheyenne BOPU) Dry Creek WRF To: (Cheyenne BOPU) Dry Creek WRF Laboratory

[] Date and time of samples analysis
[] Name of analyst
[] All analyses are reported on dry weight basis
[] Dry Creek WRF Laboratory 8911 Campstool Rd. Cheyenne, WY 82007 Ph: 307-635-3163 Fax: 307-635-6833
[] Analytical quality assurance/quality control (QA/QC) available
[] Analytical results available
[] Chain of custody record

Date: 10-14-13 | Time: 1/100 A m | [] XM |] PM

Analytical Records From: (Cheyenne BOPU) Dry Creek WRF To: (Cheyenne BOPU) Dry Creek WRF Laboratory

[]	Date and time of sample
[]	Name of analyst
[]	Analytical methods used
	Analyses and calculation results properly documented or verified
[]	All analysis are reported on dry weight basis with the exception of volatile solids or total solids in percent. (1quart plastic bag 450 grams) (7 quart plastic bags 3150 grams).
	Volatile solids and total solids samples need to be analyzed six times a year for Class B Biosolids and 12 times a year for Class A Biosolids.
[]	Analytical quality assurance/quality control (QA/QC) available
0	Analytical results available
[]	Chain of custody record

Zone: 1 | Rows: 1 - 5 | Date: 10-14-13 | Time: 11: 00 | [] AM [] PM

Analytical Sample Containers From: (Cheyenne BOPU) Dry Creek WRF To: (Cheyenne BOPU) Dry Creek WRF Laboratory

Dry Sludge for fecal results in MPN, and percent solids for Class A or Class B Biosolids. 1 quart Plastic bags 450 grams: 7 Quart Plastic bags total of 3150 grams. Fecal samples and results are analyzed at the Dry Creek WRF Laboratory in with six hours of the holding time. The results of fecal samples in (MPN) and (percent solids) need to be analyzed in, *February, April, June, August, October, and December. **January, March, May, July, September and November; test for TS and VS. Class A test for Helminth ova density limits > 1 egg/4g TS; Enteric virus density limits of > 1 PFU/4g

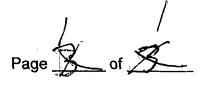
- 1. *' **Class A sludge < 1000 MPN/gram. (Test 12 times a year for TS and VS).
- 2. * Class B sludge < 2,000,000 MPN/gram
- 3. Percent solids, 75 % or better for Class A Biosolids and Class B Biosolids.
- 4. Chain of custody record

	10-14-13		
Zone:	Date: H	ime: <u>]/:00</u> [🔊 [] PM

Project Name: B1050 1.65
Location: Dry Creek WRF
Address: 8911 Campstool Rd.
City: Chéyénne State: LLy Zip Code: 8207.
Samples Collected by: Chat Build. [Date/Time: 10:14-13.
Analytical Certification
This certification must be completed by the Analytical Laboratory performing service for the Cheyenne Board of Public Utilities and submitted with each "Analytical Report.
"I certify that these analysis and resulting report (s) were prepared under my direction and supervision in accordance with a system designed to assure that qualified personal properly analyze all samples and accurately report the results. I certify that all analysis were performed in accordance with method approved for wastewater under the latest revision to 40 CFR Part 503 Sludge Regulation. Based on my inquiry of the person or persons who manage the system, or those person directly responsible for analyzing, the wastewater samples and generating the report (s), the analysis, report, and information submitted is to the best on my knowledge and belief, true, accurate, and completed."
Name of Laboratory: Dry Creek LuRP.
Address: 3911 Cum pstool Rd
City: Cheyenne State: [14] Zip Code: 82007.
Name of Analyst: Kent Lead.
This Certification is signed by:
Date: 10-31-13 Time: 9 AM [] PM

Cheyenne Board of Public Utilities Water Reclamation Laboratory

Chain of Custody and Analytical Request Record PLEASE PRINT CLEARLY, provide as much information as possible



Client's Name: 10 - 1/2 Report Required F	C.1884	Luft Cont	act Name: <u>(</u>	Let	Ba	1 J	u	1		Sampler's	Name (if o	ther than Contact):_	
Report Required F	or: 6 ZoreD	1-5		Number of Containers Sample Type AWSVBO	19	YSIS	RE	QUES	STED	How Preserved	Sample <u>Type</u>	Other <u>Information</u>	Analysis <u>Completed</u>
·			Air Water Soils/Solids Vegetation Pleaseau				HNOs Grab H ₂ SO ₄ or 4°C Composite HCL None	(pH, Field Analysis, etc.)	Yes / No (Lab use only)				
SAMPLE IDEN (Name, Loca		Collection Date	Collection Time	<u>O</u> ther MATRIX		3							
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Signed	Sample Disposal:	Return to		Down:	Lab				7 7.	97.77. 1		Log#	758

Copies to:

White - Book in Laboratory

Yellow - Laboratory Hard Copy

Pink - Client

Attachment: #4. Dry Creek Water Reclamation Facility

F. Pathogen reduction is accomplished through anaerobic digestion. The primary and secondary digested sludge is treated in the absence of air for mean cell residence time and temperature between 25 and 35 days at 92 to 100 degrees Fahrenheit. Air dried sludge is obtained with a tractor aerator on paved drying beds and on site unpaved storage area in windrows that are turned approximately once a month dependant on the weather conditions.

The Biosolids production (dry weight) at the Dry Creek WRF is over 1500 metric tons a year. Therefore samples are collected six times a year (February, April, May, June, August, October, and December). The laboratories analyze the dry samples for metals, nutrients, organics pathogens, volatile solids and total solids.

CERTIFICATION STATEMENT

I certify under the penalty of law, that the pathogen requirements in Part I.C.3, the management practices in Part I.D (if necessary) (including the practice in part I. D.13 if the table 4 annual pollutant limits are used) and the site restrictions in Part I.C.2 (if necessary) have been met. This determination has been made under my direction and supervision in accordance with the system designed to assure that qualified personnel properly gather and evaluate the information used to determine that pathogen requirements, the vector attraction reduction requirements, the management practices and the site restrictions have been met. I am aware that there are significant penalties for false certification including the possibility of imprisonment.

Signature

Jim Wughes, Manager

Water Reclamation Division

Attachment: #5. Dry Creek Water Reclamation Facility

G. Vector attraction reduction requirements are met through anaerobic digestion when there is thirty eight percent or more reduction in volatile solids. Volatile solids destruction is measured weight by volume average ((Vol. Solids Reduction = VS in - VS out / (VS in -((VS in * VS out)) (Use Average). The sludge is also air dried in windrows for further vector attraction reduction. The dry solids in windrows are between 65% to 80% total volatile solids reduction before land application.

RE: Flows From: Primary North and Primary South Raw sludge Average: Total solids (change % to Mg/l (10000) (NRS & SRS): Total Vol Solids (NRS & SRS): Total C-2 (wasting) cake flow gal: C-1 (digested) Solids (mg/L) cake: C-1 Vol solids cake (mg/L): C-2 solids cake (mg/L): C-2 Vol Solids cake (mg/L) Cake flow from Rotary Drum Thicker to digester.

CERTIFICATION STATEMENT

I certify under the penalty of law, that the pathogen requirements in Part I.C.2, one of the vector attraction Part I.C.3, alternatives in reduction the management practices in part I.D (if necessary) (including the practices in Part I.D.13 if the table 4 annual pollutant limits are used) and the site restrictions in part I.C.2 (if necessary) have been met. This determination has been made under my direction and supervision in accordance with information used to determine that the requirements, the vector attraction reduction requirements, the management practices and the site restrictions have been met. I am aware that there are significant penalties for false certification including the possibility imprisonment.

Signature

Jim Hughes, Manager

Water Reclamation Division

Attachment: #6. Dry Creek Water Reclamation Facility

H. Best management practices are accomplished by applying biosolids at a whole sludge application rate that is less than or equal to the agronomic rate for the specific site and plant species. The Biosolids are applied so that it does not adversely affect a threatened or endangered species.

Biosolids are not dispersed on sites that are flooded or snow covered, frozen ground with a slope of three percent or more to prevent run off into wetland or surface water. A buffer zone of thirty-five feet from waterways, stock wells, and surface water is observed. Biosolids land applications are prohibited to sites where the available phosphorous content of the existing soil exceeds 400 pounds per acre.

Stored Biosolids on the plant facility remain in windrows for two years or less. The Biosolids are land applied in the winter, spring and fall of the year, weather permitting. Biosolids and soil are analytically tested before disposal. Cheyenne's sludge management practice ensures compliance with both Federal and State parameters and provides for long term Biosolids procedures with little or no detriment to the environment, while enhancing the native grass and field crop production of those participating ranchers and farmers who utilize Biosolids as a fertilizer supplement and soil conditioner.

CERTIFICATION STATEMENT

I certify under the penalty of law that the pathogen requirements in Part I.C.2, one of the vector attraction reduction alternatives in Part I.C.3, the management practices in part I.D (if necessary) (including in the practices in Part I.D.13 if the table 4 annual pollutant limits are used) and the site restrictions in Part I.C.2 (if necessary) have been met. This determination has been made under my direction and supervision in accordance with the system designed to assure that qualified personal properly gather and evaluate the information used to determine that the pathogen requirements, the management practices and the site restrictions have been met. I am aware that there are significant penalties for false certification including the possibility of imprisonment.

Signature

Jim Hughes, Manager

Water Reclamation Division Attachment: #7.

Dry Creek Water Reclamation Facility

I. Site restrictions are first achieved through the quality of sewage sludge product which has been stabilized to reduce pathogenic organisms, which has been dried to a solids concentration of sixty percentile or greater and contains no hazardous or toxic compounds or chemicals in concentrations which exceed those authorized by the USA EPA REGION VIII and WYOMING DEQ for land application in Part C.1, Specific Limitations and Self Monitoring Requirements and Chemical Pollutant Limitations.

The dry sludge that is produced is class \underline{A} and \underline{B} which are applied primarily to range land. Before applying sewage sludge on rangeland, pastureland, farm land, or fields, soil samples have been collected and have had the appropriate soil analysis conducted.

The <u>Class B</u> Sludge with respect to pathogens has been in compliance with the entire site restrictions listed in Part I.C.2. No sludge or material derived from sludge exceeds the limits in Table 3 Part I.C.1. The <u>Class A</u> pathogen reduction limits in Part I.C.2 meets the first 4 vector attraction reduction alternatives in Part I.C.3. There are sufficient management practices used to prevent malfunctions and deterioration, operator errors and discharges which may cause or lead to the release of sludge to the environment, a threat to human health or a nuisance.

CERTIFICATION STATEMENT

I certify under the penalty of law, that the pathogen requirements in Part I.C.2, one of the vector attraction the management reduction alternatives in Part I.C.3, practices in Part I.D (if necessary) including the practice in Part I.D.13 if the table 4 annual pollutant limits are used) and the site restrictions in Part I.C.2 (if necessary) have been met. This determination has been made under my direction and supervision in accordance with the system designed to assure that qualified personnel properly gather and evaluate the information used to determine that the pathogen requirements, the vector attractions reduction requirements, the management practices and the restrictions have been met. I am aware that there are significant penalties for false certification including the possibility of imprisonment.

Signature

Jim Hughes, Manager



ANALYTICAL RESULTS

DRY CREEK WWTP LABORATORY

Cheyenne BOPU 8911 Campstool Road Cheyenne, Wyoming 82007 Phone: 307-635-3163 Fax: 307-635-6833

Date Sampled: 10/14/13

Date Received: 10/14/13

Sample Location: Zone C Sample Matrix: Compost Sampled By: CB

Date Reported: 10/24/13

Date Fecal Analyzed: 10/14/13 Date Solids Analyzed: 10/21/13

Analyst(s): mw

EPA Method/Total Solids:

SM 19th Ed 2540B

EPA Method/Volatile Solids: SM 19th Ed 2540E

EPA Method/Fecal Coliform: SM 18th Ed 9221E (A-1 Media)

Row #	Total Solids %	Volatile Solids%	Fecal Coliform/ Dry Gram Sludge		
1	60.9	33.5	<533 ·		
2	66.6	27.1	<487		
3	60.7	29.7	<535		
4	64.9	33.7	<541		
5	67.9	35.0	<572		
6	59.4	37.6	602		
7	57.0	41.4	<546		

Comments:

All data meets QA/QC requirements; please see QA/QC files in Dry Creek Laboratory. NA = Not Analyzed

ent Loader, Laboratory Supervisor

10.29.13

Date:

Dry Creek WRF Laboratory For: Fecal, TS & VS

Identification Reporting: No. WYSL -22934

Permit No. WYG - 650002

(Cheyenne BOPU) Dry Creek Water Reclamation Facility

Samples and Analytical

Quality Assurance/Quality Control OA/QC

Date: 10-14-13 Time: 1/300 [[AM [] PM

<u>Analytical Sampling Records</u> (Cheyenne BOPU) Dry Creek WRF Laboratory

[] Dates and time of samples collected
[] Sampling location documented
[] Sampling types appropriate
[] Sampling volumes recorded
[] Name of person sampling
[] Types of sampling containers
[] Methods of preservation
[] Sampling quality assurance/ quality control QA/QC available
[] Pollutant limits red flagged if over mg/kg (Table 1,2,3,4 and Section 503.13) (Class A and B Biosolids)
[] Certification statement signed with each laboratory analytical report:
1. Pathogen reduction
2. Vector attraction reduction operates at Dry Creek WRF analysis samples. Results from daily sheets and results, recorded daily.
3. Management Practices
4. Site restrictions
[] Class A sludge: average temperature, (volatile solids percent) and total solids Dry sludge) once a month. Turn rows once a month, <u>weather permitting</u> .
[] Chain of custody recorded
Date: 10-14-13 Time: 17:00 [] AM)[] PM

Analytical Records From: (Cheyenne BOPU) Dry Creek WRF To: (Cheyenne BOPU) Dry Creek WRF Laboratory

[] Date and time of samples analysis	
[] Name of analyst	
[] All analyses are reported on dry weight basis	
[] Dry Creek WRF Laboratory 8911 Campstool Rd. Cheyenne, WY 82007 Ph: 307-635-3163 Fax: 307-635-6833	
[] Analytical quality assurance/quality control (QA/QC) available	
[] Analytical results available	
[] Chain of custody record	

Analytical Records From: (Cheyenne BOPU) Dry Creek WRF To: (Cheyenne BOPU) Dry Creek WRF Laboratory

[] Date and time of sample
[] Name of analyst
[] Analytical methods used
[] Analyses and calculation results properly documented or verified
[] All analysis are reported on dry weight basis with the exception of volatile solids or total solids in percent. (1quart plastic bag 450 grams) (7 quart plastic bags 3150 grams).
[] Volatile solids and total solids samples need to be analyzed six times a year for Class B Biosolids and 12 times a year for Class A Biosolids.
[] Analytical quality assurance/quality control (QA/QC) available
[] Analytical results available
[] Chain of custody record

Analytical Sample Containers From: (Cheyenne BOPU) Dry Creek WRF To: (Cheyenne BOPU) Dry Creek WRF Laboratory

Dry Sludge for fecal results in MPN, and percent solids for Class A or Class B Biosolids. 1 quart Plastic bags 450 grams: 7 Quart Plastic bags total of 3150 grams. Fecal samples and results are analyzed at the Dry Creek WRF Laboratory in with six hours of the holding time. The results of fecal samples in (MPN) and (percent solids) need to be analyzed in, *February, April, June, August, October, and December. **January, March, May, July, September and November; test for TS and VS. Class A test for Helminth ova density limits > 1 egg/4g TS; Enteric virus density limits of > 1 PFU/4g

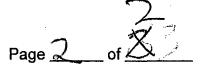
- 1. *' **Class A sludge < 1000 MPN/gram. (Test 12 times a year for TS and VS).
- 2. * Class B sludge < 2,000,000 MPN/gram
- 3. Percent solids, 75 % or better for Class A Biosolids and Class B Biosolids.
- 4. Chain of custody record

Zone: C | Rows: 1 - 1 | Date: 10 - 1743 | Time: 1100 | [] AM [] PM

Project Name: 181080 1189
Location: Dry CreEKLURE.
Address: 891/ Campstool Rd.
City: Chey Enne State: [Y] Zip Code: [2007.
City: Chey enne State: [y] Zip Code: 82007. Samples Collected by: Chef Barbul [Date/Time: 10-14-13///ce/H.m.
Analytical Certification
This certification must be completed by the Analytical Laboratory performing service for the Cheyenne Board of Public Utilities and submitted with each "Analytical Report.
"I certify that these analysis and resulting report (s) were prepared under my direction and supervision in accordance with a system designed to assure that qualified personal properly analyze all samples and accurately report the results. I certify that all analysis were performed in accordance with method approved for wastewater under the latest revision to 40 CFR Part 503 Sludge Regulation. Based on my inquiry of the person or persons who manage the system, or those person directly responsible for analyzing, the wastewater samples and generating the report (s), the analysis, report, and information submitted is to the best on my knowledge and belief, true, accurate, and completed."
Name of Laboratory: Dry Creek WRF.
Address: 8911 Campstool Rd.
City: Cheyenne State: Liy Zip Code: 82007.
Name of Analyst: Kent Loader.
This Certification is signed by:
Date: 10-31-13 Time: 7 (AM [] PM



Chain of Custody and Analytical Request Record
PLEASE PRINT CLEARLY, provide as much information as possible



								
Client's Name: Dry C/PK WRS Contact Name: (Alt Baukill Sampler's Name (if other than Contact):								
Client's Name: 177	CIPIKIL	<u>∠ ⊱ </u> Contact Name: <u>∫</u>	ALL V	MAL	<u> </u>	Sampler's Name (if	other than Contact):_	
Report Required F	or:		Number of A	NALYSIS	REQUESTED	How Sample	Other	Analysis
B,0501,15	ZoneA	- Rows 8-9	Containers Sample Type			Preserved Type	Information	Completed
D. Walids	ZULE C	ROWS1-5	AWSVBO Air <u>W</u> ater	100		HNO ₃ Grab	(pH, Field Analysis,	Yes / No
D. C. C.			Soils/Solids	4		H ₂ SO ₄ or	etc.)	(Lab use only)
			Vegetation			4°C Composit	e	
			Bioassay	3		None		
SAMPLE IDEN		Collection Collection	Other (記しる				
(Name, Loca	tion, etc.)	Date Time	MATRIX					4,
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Custody		. 17	Date/Time:	. 5 .		1/1		Date/Time: /
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<u>MUST</u> be Signed	Sample Disposal:	Return to client:		Lab dispos			Log#	757
	Touripie Disposal.					(1)	1 ~ Au	

Copies to:

White - Book in Laboratory

Yellow - Laboratory Hard Copy

Pink - Client

Attachment: #4. Dry Creek Water Reclamation Facility

F. Pathogen reduction is accomplished through anaerobic digestion. The primary and secondary digested sludge is treated in the absence of air for mean cell residence time and temperature between 25 and 35 days at 92 to 100 degrees Fahrenheit. Air dried sludge is obtained with a tractor aerator on paved drying beds and on site unpaved storage area in windrows that are turned approximately once a month dependant on the weather conditions.

The Biosolids production (dry weight) at the Dry Creek WRF is over 1500 metric tons a year. Therefore samples are collected six times a year (February, April, May, June, August, October, and December). The laboratories analyze the dry samples for metals, nutrients, organics pathogens, volatile solids and total solids.

CERTIFICATION STATEMENT

I certify under the penalty of law, that the pathogen requirements in Part I.C.3, the management practices in Part I.D (if necessary) (including the practice in part I. D.13 if the table 4 annual pollutant limits are used) and the site restrictions in Part I.C.2 (if necessary) have been met. This determination has been made under my direction and supervision in accordance with the system designed to assure that qualified personnel properly gather and evaluate the information used to determine that pathogen requirements, the vector attraction reduction requirements, the management practices and the site restrictions have been met. I am significant penalties that there are for false certification including the possibility of imprisonment.

Signature

Jim Hughes, Manager

Water Reclamation Division

Attachment: #5. Dry Creek Water Reclamation Facility

G. Vector attraction reduction requirements are met through anaerobic digestion when there is thirty eight percent or more reduction in volatile solids. Volatile solids destruction is measured weight by volume average ((Vol. Solids Reduction = VS in - VS out / (VS in - (VS in * VS out)) (Use Average). The sludge is also air dried in windrows for further vector attraction reduction. The dry solids in windrows are between 65% to 80% total volatile solids reduction before land application.

RE: Flows From: Primary North and Primary South Raw sludge Average: Total solids (change % to Mg/l (10000) (NRS & SRS): Total Vol Solids (NRS & SRS): Total C-2 (wasting) cake flow gal: C-1 (digested) Solids (mg/L) cake: C-1 Vol solids cake (mg/L): C-2 solids cake (mg/L): C-2 Vol Solids cake (mg/L) Cake flow from Rotary Drum Thicker to digester.

CERTIFICATION STATEMENT

I certify under the penalty of law, that the pathogen requirements in Part I.C.2, one of the vector attraction reduction alternatives in Part I.C.3, the management practices in part I.D (if necessary) (including practices in Part I.D.13 if the table 4 annual pollutant limits are used) and the site restrictions in part I.C.2 (if necessary) have been met. This determination has been made under my direction and supervision in accordance with information used to determine that the requirements, the vector attraction reduction requirements, the management practices and the site restrictions have been met. I am aware that there are significant penalties for false certification including the possibility imprisonment.

Signature

Jim Hughes, Manager

Water Reclamation Division

Attachment: #6. Dry Creek Water Reclamation Facility

H. Best management practices are accomplished by applying biosolids at a whole sludge application rate that is less than or equal to the agronomic rate for the specific site and plant species. The Biosolids are applied so that it does not adversely affect a threatened or endangered species.

Biosolids are not dispersed on sites that are flooded or snow covered, frozen ground with a slope of three percent or more to prevent run off into wetland or surface water. A buffer zone of thirty-five feet from waterways, stock wells, and surface water is observed. Biosolids land applications are prohibited to sites where the available phosphorous content of the existing soil exceeds 400 pounds per acre.

Stored Biosolids on the plant facility remain in windrows for two years or less. The Biosolids are land applied in the winter, spring and fall of the year, weather permitting. Biosolids and soil are analytically tested before disposal. Cheyenne's sludge management practice ensures compliance with both Federal and State parameters and provides for long term Biosolids procedures with little or no detriment to the environment, while enhancing the native grass and field crop production of those participating ranchers and farmers who utilize Biosolids as a fertilizer supplement and soil conditioner.

CERTIFICATION STATEMENT

I certify under the penalty of law that the pathogen requirements in Part I.C.2, one of the vector attraction reduction alternatives the in Part I.C.3, management practices in part I.D (if necessary) (including in the practices in Part I.D.13 if the table 4 annual pollutant limits are used) and the site restrictions in Part I.C.2 (if necessary) have been met. This determination has been made under my direction and supervision in accordance with the system designed to assure that qualified personal properly gather and evaluate the information used to determine that the pathogen requirements, the management practices and the site restrictions have been met. I am aware that there are significant penalties for false certification including the possibility of imprisonment.

Signature

Jim Hughes, Manager

Water Reclamation Division Attachment: #7.

Dry Creek Water Reclamation Facility

I. Site restrictions are first achieved through the quality of sewage sludge product which has been stabilized to reduce pathogenic organisms, which has been dried to a solids concentration of sixty percentile or greater and contains no hazardous or toxic compounds or chemicals in concentrations which exceed those authorized by the USA EPA REGION VIII and WYOMING DEQ for land application in Part C.1, Specific Limitations and Self Monitoring Requirements and Chemical Pollutant Limitations.

The dry sludge that is produced is class \underline{A} and \underline{B} which are applied primarily to range land. Before applying sewage sludge on rangeland, pastureland, farm land, or fields, soil samples have been collected and have had the appropriate soil analysis conducted.

The Class B Sludge with respect to pathogens has been in compliance with the entire site restrictions listed in Part I.C.2. No sludge or material derived from sludge exceeds the limits in Table 3 Part I.C.1. The Class A pathogen reduction limits in Part I.C.2 meets the first 4 vector attraction reduction alternatives in Part I.C.3. There are sufficient management practices used to prevent malfunctions and deterioration, operator errors and discharges which may cause or lead to the release of sludge to the environment, a threat to human health or a nuisance.

CERTIFICATION STATEMENT

I certify under the penalty of law, that the pathogen requirements in Part I.C.2, one of the vector attraction reduction alternatives in Part I.C.3, the management practices in Part I.D (if necessary) including the practice in Part I.D.13 if the table 4 annual pollutant limits are used) and the site restrictions in Part I.C.2 (if necessary) have been met. This determination has been made under my direction and supervision in accordance with the system designed to assure that qualified personnel properly gather and evaluate the information used to determine that the pathogen requirements, the vector attractions reduction requirements, the management practices and the restrictions have been met. I am aware that there are significant penalties for false certification including the possibility of imprisonment.

Signature J Jim Hughes, Manager



ANALYTICAL RESULTS

DRY CREEK WWTP LABORATORY

Chevenne BOPU 8911 Campstool Road Cheyenne, Wyoming 82007 Phone: 307-635-3163 Fax: 307-635-6833

Date Sampled: 10/14/13

Date Received: 10/14/13

Sample Location: Zone A

Sample Matrix: Compost

Sampled By: CB

Date Reported: 10/24/13

Date Fecal Analyzed: 10/14/13 Date Solids Analyzed: 10/21/13

Analyst(s): mw

EPA Method/Total Solids:

SM 19th Ed 2540B

EPA Method/Volatile Solids: SM 19th Ed 2540E

EPA Method/Fecal Coliform: SM 18th Ed 9221E (A-1 Media)

Fecal Coliform/

Row #	Total Solids %	Volatile Solids%	Dry Gram Sludge
1	67.1	22.6	484
2	62.9	23.3	<517 ·
3	65.2	26.4	<498
4	67.0	39.8	<485
5	59.4	33.2	<546
6	49.0	51.7	<663
7	52.8	40.4	<615
8	57.6	35.2	625
9	54.0	45.1	<601

Comments:

All data meets QA/QC requirements; please see QA/QC files in Dry Creek Laboratory. NA = Not Analyzed

ent Loader, Laboratory Supervisor

Dry Creek WRF Laboratory For: Fecal, TS & VS

Identification Reporting: No. WYSL - 22934

Permit No. WYG - <u>650002</u>

(Cheyenne BOPU) Dry Creek Water Reclamation Facility

Samples and Analytical

Quality Assurance/Quality Control OA/QC

Date: 15-15 | Time: 11:00 | []AM [] PM

Analytical Sampling Records (Cheyenne BOPU) Dry Creek WRF Laboratory

[] Dates and time of samples collected
[] Sampling location documented
[] Sampling types appropriate
[] Sampling volumes recorded
[] Name of person sampling
[] Types of sampling containers
[] Methods of preservation
[] Sampling quality assurance/ quality control QA/QC available
[] Pollutant limits red flagged if over mg/kg (Table 1,2,3,4 and Section 503.13) (Class A and B Biosolids)
[] Certification statement signed with each laboratory analytical report:
1. Pathogen reduction
2. Vector attraction reduction operates at Dry Creek WRF analysis samples. Results from daily sheets and results, recorded daily.
3. Management Practices
4. Site restrictions
[] Class A sludge: average temperature, (volatile solids percent) and total solids Dry sludge) once a month. Turn rows once a month, <u>weather permitting</u> .
[] Chain of custody recorded
Date: $\int (0-14-13)$ Time: $\int \int (00)^{-1} []$ AM [] PM

Analytical Records From: (Cheyenne BOPU) Dry Creek WRF To: (Cheyenne BOPU) Dry Creek WRF Laboratory

[] Date and time of samples analysis
[] Name of analyst
[] All analyses are reported on dry weight basis
[] Dry Creek WRF Laboratory 8911 Campstool Rd. Cheyenne, WY 82007 Ph: 307-635-3163 Fax: 307-635-6833
[] Analytical quality assurance/quality control (QA/QC) available
[] Analytical results available
[] Chain of custody record

Analytical Records From: (Cheyenne BOPU) Dry Creek WRF To: (Cheyenne BOPU) Dry Creek WRF Laboratory

[] Date and time of sampl	le
[] Name of analyst	
[] Analytical methods use	e d
[] Analyses and calculation	on results properly documented or verified
	ed on dry weight basis with the exception of volatile solids nt. (1quart plastic bag 450 grams) (7 quart plastic bags
23	l solids samples need to be analyzed six times a year for 12 times a year for Class A Biosolids.
[] Analytical quality assu	rance/quality control (QA/QC) available
[] Analytical results avail	able
[] Chain of custody recor	d

Zone: | Rows: | - 9 Date: 10-14-73 Time: // 100 | AM | PM

Analytical Sample Containers From: (Cheyenne BOPU) Dry Creek WRF To: (Cheyenne BOPU) Dry Creek WRF Laboratory

Dry Sludge for fecal results in MPN, and percent solids for Class A or Class B Biosolids. 1 quart Plastic bags 450 grams: 7 Quart Plastic bags total of 3150 grams. Fecal samples and results are analyzed at the Dry Creek WRF Laboratory in with six hours of the holding time. The results of fecal samples in (MPN) and (percent solids) need to be analyzed in, *February, April, June, August, October, and December. **January, March, May, July, September and November; test for TS and VS. Class A test for Helminth ova density limits > 1 egg/4g TS; Enteric virus density limits of > 1 PFU/4g

- 1. *' **Class A sludge < 1000 MPN/gram. (Test 12 times a year for TS and VS).
- 2. * Class B sludge < 2,000,000 MPN/gram
- 3. Percent solids, 75 % or better for Class A Biosolids and Class B Biosolids.
- 4. Chain of custody record

Zone: A | Rows: | - 9 | Date: 10-14-13 | Time: 11:00 | [] AM [] PM

Project Name: B1050 lid 5							
Location: Novert WRF.							
Address: 89/1 Cumpstal Rd.							
City: Chevenne State: Wy Zip Code: \$2007.							
Samples Collected by: Chet Backett .[Date/Time: 10 - 14-13/11:101417]							
Analytical Certification							
This certification must be completed by the Analytical Laboratory performing service for the Cheyenne Board of Public Utilities and submitted with each "Analytical Report.							
"I certify that these analysis and resulting report (s) were prepared under my direction and supervision in accordance with a system designed to assure that qualified personal properly analyze all samples and accurately report the results. I certify that all analysis were performed in accordance with method approved for wastewater under the latest revision to 40 CFR Part 503 Sludge Regulation. Based on my inquiry of the person or persons who manage the system, or those person directly responsible for analyzing, the wastewater samples and generating the report (s), the analysis, report, and information submitted is to the best on my knowledge and belief, true, accurate, and completed."							
Name of Laboratory: Dry Cleek WRF							
Address: 8911 Camp Stool Rd							
City: Cheyenne State: (1) Zip Code: \[\frac{72007}{}.\]							
Name of Analyst: / Local .							
This Certification is signed by:							
Date: 10.31.13 Time:] Time:] AM [] PM							

Cheyenne Board of Public Utilities Water Reclamation Laboratory

Chain of Custody and Analytical Request Record
PLEASE PRINT CLEARLY, provide as much information as possible

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-4	1822
Page	_ of
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Client's Name: 0/ / (/			act Name:_(.÷		ampler's I	Name (if o	ther than Contact):_	
Report Required For: ここのre み よ	B,0501,1;	^分 ーフ		Number of Containers Sample Type AWSVBO		IS F	REQUI	STE		How Preserved	Sample <u>Type</u>	Other Information	Analysis Completed
			:	Air Water Soils/Solids Vegetation Bioassay	2 / / 20					HNO₃ H₂SO₄ 4°C HCL None	Grab or Composite	(pH, Field Analysis, etc.)	Yes / No (Lab use only)
SAMPLE IDENTIF (Name, Location,		Collection Date	Collection Time	<u>O</u> ther MATRIX	The training	7							
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Copies to:

White - Book in Laboratory

Now - Laboratory Hard Copy

Pink - Client

Cheyenne Board of Public Utilities Water Reclamation Laboratory

Chain of Custody and Analytical Request Record PLEASE PRINT CLEARLY, provide as much information as possible

Page 2 of X

Client's Name: Dry C188K (URS) Contact Name: (Ast Bruhell Sampler's Name (if other than Contact):								
Donnit Donniton Com		Number of Containers Sample Type	REQUESTED How Sample Preserved Type	Other Analysis Information Completed				
Losolill Zone	ROW51-5	A W S V B O Air Water Soils/Solids Vegetation Bioassay	HNO ₃ Grab H ₂ SO ₄ or 4°C Composite HCL None	(pH, Field Analysis, Yes / No etc.) (Lab use only)				
SAMPLE IDENTIFICATION (Name, Location, etc.)	Collection Collection Date Time	Other MATRIX						
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Signed Sample Disposal:	Return to client:	Lab dispos	sal:	Log# 757				

Copies to:

White - Book in Laboratory

Yaboratory Hard Copy

Pink - Client

Attachment: #4. Dry Creek Water Reclamation Facility

F. Pathogen reduction is accomplished through anaerobic digestion. The primary and secondary digested sludge is treated in the absence of air for mean cell residence time and temperature between 25 and 35 days at 92 to 100 degrees Fahrenheit. Air dried sludge is obtained with a tractor aerator on paved drying beds and on site unpaved storage area in windrows that are turned approximately once a month dependant on the weather conditions.

The Biosolids production (dry weight) at the Dry Creek WRF is over 1500 metric tons a year. Therefore samples are collected six times a year (February, April, May, June, August, October, and December). The laboratories analyze the dry samples for metals, nutrients, organics pathogens, volatile solids and total solids.

CERTIFICATION STATEMENT

I certify under the penalty of law, that the pathogen requirements in Part I.C.3, the management practices in Part I.D (if necessary) (including the practice in part I.D.13 if the table 4 annual pollutant limits are used) and the site restrictions in Part I.C.2 (if necessary) have been met. This determination has been made under my direction and supervision in accordance with the system designed to assure that qualified personnel properly gather and evaluate the information used to determine that pathogen requirements, the vector attraction reduction requirements, the management practices and the site restrictions have been met. I am aware that there are significant penalties for false certification including the possibility of imprisonment.

Sign/ature

Jim Hughes, Manager

Water Reclamation Division

Attachment: #5. Dry Creek Water Reclamation Facility

G. Vector attraction reduction requirements are met through anaerobic digestion when there is thirty eight percent or more reduction in volatile solids. Volatile solids destruction is measured weight by volume average ((Vol. Solids Reduction = VS in - VS out / (VS in - ((VS in * VS out)) (Use Average). The sludge is also air dried in windrows for further vector attraction reduction. The dry solids in windrows are between 65% to 80% total volatile solids reduction before land application.

RE: Flows From: Primary North and Primary South Raw sludge Average: Total solids (change % to Mg/l (10000) (NRS & SRS): Total Vol Solids (NRS & SRS): Total C-2 (wasting) cake flow gal: C-1 (digested) Solids (mg/L) cake: C-1 Vol solids cake (mg/L): C-2 solids cake (mg/L): C-2 Vol Solids cake (mg/L) Cake flow from Rotary Drum Thicker to digester.

CERTIFICATION STATEMENT

I certify under the penalty of law, that the pathogen requirements in Part I.C.2, one of the vector attraction reduction alternatives in Part I.C.3, the management practices part I.D (if necessary) (including practices in Part I.D.13 if the table 4 annual pollutant limits are used) and the site restrictions in part I.C.2 (if necessary) have been met. This determination has been made under my direction and supervision in accordance with information used to determine that the requirements, the vector attraction reduction requirements, the management practices and the site restrictions have been met. I am aware that there are significant penalties for certification including the possibility imprisonment.

Signature

Jim Hughes, Manager

Water Reclamation Division

H. Best management practices are accomplished by applying biosolids at a whole sludge application rate that is less than or equal to the agronomic rate for the specific site and plant species. The Biosolids are applied so that it does not adversely affect a threatened or endangered species.

Biosolids are not dispersed on sites that are flooded or snow covered, frozen ground with a slope of three percent or more to prevent run off into wetland or surface water. A buffer zone of thirty-five feet from waterways, stock wells, and surface water is observed. Biosolids land applications are prohibited to sites where the available phosphorous content of the existing soil exceeds 400 pounds per acre.

Stored Biosolids on the plant facility remain in windrows for two years or less. The Biosolids are land applied in the winter, spring and fall of the year, weather permitting. Biosolids and soil are analytically tested before disposal. Cheyenne's sludge management practice ensures compliance with both Federal and State parameters and provides for long term Biosolids procedures with little or no detriment to the environment, while enhancing the native grass and field crop production of those participating ranchers and farmers who utilize Biosolids as a fertilizer supplement and soil conditioner.

CERTIFICATION STATEMENT

I certify under the penalty of law that the pathogen requirements in Part I.C.2, one of the vector attraction reduction alternatives in Part I.C.3, the management practices in part I.D (if necessary) (including in the practices in Part I.D.13 if the table 4 annual pollutant limits are used) and the site restrictions in Part I.C.2 (if necessary) have been met. This determination has been made under my direction and supervision in accordance with the system designed to assure that qualified personal properly gather and evaluate the information used to determine that the pathogen requirements, the management practices and the site restrictions have been met. I am aware that there are significant penalties for false certification including the possibility of imprisonment.

Signature

Jim Hughes, Manager

Water Reclamation Division Attachment: #7.

Dry Creek Water Reclamation Facility

I. Site restrictions are first achieved through the quality of sewage sludge product which has been stabilized to reduce pathogenic organisms, which has been dried to a solids concentration of sixty percentile or greater and contains no hazardous or toxic compounds or chemicals in concentrations which exceed those authorized by the USA EPA REGION VIII and WYOMING DEQ for land application in Part C.1, Specific Limitations and Self Monitoring Requirements and Chemical Pollutant Limitations.

The dry sludge that is produced is class A and B which are applied primarily to range land. Before applying sewage sludge on rangeland, pastureland, farm land, or fields, soil samples have been collected and have had the appropriate soil analysis conducted.

The <u>Class B</u> Sludge with respect to pathogens has been in compliance with the entire site restrictions listed in Part I.C.2. No sludge or material derived from sludge exceeds the limits in Table 3 Part I.C.1. The <u>Class A</u> pathogen reduction limits in Part I.C.2 meets the first 4 vector attraction reduction alternatives in Part I.C.3. There are sufficient management practices used to prevent malfunctions and deterioration, operator errors and discharges which may cause or lead to the release of sludge to the environment, a threat to human health or a nuisance.

CERTIFICATION STATEMENT

I certify under the penalty of law, that the pathogen requirements in Part I.C.2, one of the vector attraction reduction alternatives in Part I.C.3, the management practices in Part I.D (if necessary) including the practice in Part I.D.13 if the table 4 annual pollutant limits are used) and the site restrictions in Part I.C.2 (if necessary) have been met. This determination has been made under my direction and supervision in accordance with the system designed to assure that qualified personnel properly gather and evaluate the information used to determine that the pathogen requirements, the vector attractions reduction requirements, the management practices and the restrictions have been met. I am aware that there are significant penalties for false certification including the possibility of imprisonment.

Signature |

Jim()Hughes, Manager



ANALYTICAL RESULTS

DRY CREEK WWTP LABORATORY

Cheyenne BOPU 8911 Campstool Road Cheyenne, Wyoming 82007 Phone: 307-635-3163 Fax: 307-635-6833

Date Sampled: 08/13/13

Date Received: 08/13/13

Sample Location: Zone E Sample Matrix: Compost

Sampled By: CB

Date Reported: 08/27/13

Date Fecal Analyzed: 08/13/13 Date Solids Analyzed: 08/20/13

Analyst(s): mw

EPA Method/Total Solids:

SM 19th Ed 2540B

EPA Method/Volatile Solids: SM 19th Ed 2540E

EPA Method/Fecal Coliform: SM 18th Ed 9221E (A-1 Media)

Takal Calida M

Fecal Coliform/

Kow #	Total Solids %	Volatile Solids%	Dry Gram Sludge
1	77.1	39.4	<421
2	75.6	37.1	<429
3	70.6	39.0	<460
4	80.2	37.8	<405
5	82.9	39.6	<392
6	80.9	39.7	<402
7	85.2	40.8	<381
8	84.6	36.9	<384
9	62.4	41.8	<521

Com

All data meets QA/QC requirements; please see QA/QC files in Dry Creek Laboratory. NA = Not Analyzed

nt Loader, Laboratory Supervisor

Dry Creek WRF Laboratory For: Fecal, TS & VS

Identification Reporting: No. WYSL - 22934

Permit No. WYG - <u>650002</u>

(Cheyenne BOPU) Dry Creek Water Reclamation Facility

Samples and Analytical

Quality Assurance/Quality Control OA/QC

Date: 8-13 - 13 | Time: 10:05 | [[AM [] PM

Analytical Sampling Records (Cheyenne BOPU) Dry Creek WRF Laboratory

[] Dates and time of samples collected
[] Sampling location documented
[] Sampling types appropriate
[] Sampling volumes recorded
[] Name of person sampling
[] Types of sampling containers
[] Methods of preservation
[] Sampling quality assurance/ quality control QA/QC available
[] Pollutant limits red flagged if over mg/kg (Table 1,2,3,4 and Section 503.13) (Class A and B Biosolids)
[] Certification statement signed with each laboratory analytical report:
1. Pathogen reduction
2. Vector attraction reduction operates at Dry Creek WRF analysis samples. Results from daily sheets and results, recorded daily.
3. Management Practices
4. Site restrictions
[] Class A sludge: average temperature, (volatile solids percent) and total solids Dry sludge) once a month. Turn rows once a month, <u>weather permitting</u> .
[] Chain of custody recorded
Date: <u>8-13-13</u> Time: <u>10:05</u> [] AM [] PM

Analytical Records From: (Cheyenne BOPU) Dry Creek WRF To: (Cheyenne BOPU) Dry Creek WRF Laboratory

[] Date and time of samples analysis
[] Name of analyst
[] All analyses are reported on dry weight basis
[] Dry Creek WRF Laboratory 8911 Campstool Rd. Cheyenne, WY 82007 Ph: 307-635-3163 Fax: 307-635-6833
[] Analytical quality assurance/quality control (QA/QC) available
[] Analytical results available
[] Chain of custody record

Analytical Records From: (Cheyenne BOPU) Dry Creek WRF To: (Cheyenne BOPU) Dry Creek WRF Laboratory

[] Date and time of sample
[] Name of analyst
[] Analytical methods used
[] Analyses and calculation results properly documented or verified
[] All analysis are reported on dry weight basis with the exception of volatile solids or total solids in percent. (1quart plastic bag 450 grams) (7 quart plastic bags 3150 grams).
[] Volatile solids and total solids samples need to be analyzed six times a year for Class B Biosolids and 12 times a year for Class A Biosolids.
[] Analytical quality assurance/quality control (QA/QC) available
[] Analytical results available
Chain of custody record

Zone: F | Rows: 1 - 9 | Date: 8-13-13 | Time: 10:05 | [] AM | PM

Analytical Sample Containers From: (Cheyenne BOPU) Dry Creek WRF To: (Cheyenne BOPU) Dry Creek WRF Laboratory

Dry Sludge for fecal results in MPN, and percent solids for Class A or Class B Biosolids. 1 quart Plastic bags 450 grams: 7 Quart Plastic bags total of 3150 grams. Fecal samples and results are analyzed at the Dry Creek WRF Laboratory in with six hours of the holding time. The results of fecal samples in (MPN) and (percent solids) need to be analyzed in, *February, April, June, August, October, and December. **January, March, May, July, September and November; test for TS and VS. Class A test for Helminth ova density limits > 1 egg/4g TS; Enteric virus density limits of > 1 PFU/4g

- 1. *' **Class A sludge < 1000 MPN/gram. (Test 12 times a year for TS and VS).
- 2. * Class B sludge < 2,000,000 MPN/gram
- 3. Percent solids, 75 % or better for Class A Biosolids and Class B Biosolids.
- 4. Chain of custody record

Zone: F | Rows: | - 9 | Date: 8-13-13 | Time: 10:05 | [] AM [] PM

Project Name: 3,050/id5
Location: Dry Creek WRF.
Address: 8911 Camps rai Rdi.
City: Chenne State: 14 y Zip Code: 8207.
City:
Analytical Certification
This certification must be completed by the Analytical Laboratory performing service for the Cheyenne Board of Public Utilities and submitted with each "Analytical Report.
"I certify that these analysis and resulting report (s) were prepared under my direction and supervision in accordance with a system designed to assure that qualified personal properly analyze all samples and accurately report the results. I certify that all analysis were performed in accordance with method approved for wastewater under the latest revision to 40 CFR Part 503 Sludge Regulation. Based on my inquiry of the person or persons who manage the system, or those person directly responsible for analyzing, the wastewater samples and generating the report (s), the analysis, report, and information submitted is to the best on my knowledge and belief, true, accurate, and completed."
Name of Laboratory: Dry Creek war-
Address: 8411 Campstol Rd.
City: Chejeme State: 44 Zip Code: 82007.
Name of Analyst: fent logs.
This Certification is signed by:
Date: 16-29-13 Time: 8 JAM [] PM

Cheyenne Board of Public Utilities Water Reclamation Laboratory

Chain of Custody and Analytical Request Record
PLEASE PRINT CLEARLY, provide as much information as possible

Client's N	lame: //	·y C	Veak	<u>U</u> R/€ont	act Name:_	dut	T.	F ₂₀	4 <i>A</i>]		Sampler's	Name (if o	other than Contact):_	
Report	Required	For:	Row		., ., ., .	Number of Containers Sample Type A W S V B O Air <u>Water</u> Soils/Solids <u>V</u> egetation	Howar 10		REQ	UESTEI	HNO ₃ H ₂ SO ₄ 4°C HCL	Sample Type Grab or Composite	Other Information (pH, Field Analysis, etc.)	Analysis <u>Completed</u> Yes / No (Lab use only)
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Cheyenne Board of Public Utilities Water Reclamation Laboratory

Chain of Custody and Analytical Request Record
PLEASE PRINT CLEARLY, provide as much information as possible

Page of P

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Signed Sample Disposal:	Return to	client:	,	Lat	dispo	sal:	-					Log#	738

Attachment: #4. Dry Creek Water Reclamation Facility

F. Pathogen reduction is accomplished through anaerobic digestion. The primary and secondary digested sludge is treated in the absence of air for mean cell residence time and temperature between 25 and 35 days at 92 to 100 degrees Fahrenheit. Air dried sludge is obtained with a tractor aerator on paved drying beds and on site unpaved storage area in windrows that are turned approximately once a month dependant on the weather conditions.

The Biosolids production (dry weight) at the Dry Creek WRF is over 1500 metric tons a year. Therefore samples are collected six times a year (February, April, May, June, August, October, and December). The laboratories analyze the dry samples for metals, nutrients, organics pathogens, volatile solids and total solids.

CERTIFICATION STATEMENT

I certify under the penalty of law, that the pathogen requirements in Part I.C.3, the management practices in Part I.D (if necessary) (including the practice in part I.D.13 if the table 4 annual pollutant limits are used) and the site restrictions in Part I.C.2 (if necessary) have been met. This determination has been made under my direction and supervision in accordance with the system designed to assure that qualified personnel properly gather and evaluate the information used to determine that pathogen requirements, the vector attraction reduction requirements, the management practices and the site restrictions have been met. I am aware that there are significant penalties for false certification including the possibility of imprisonment.

Signature

Jim Hughes, Manager

Water Reclamation Division

Attachment: #5. Dry Creek Water Reclamation Facility

G. Vector attraction reduction requirements are met through anaerobic digestion when there is thirty eight percent or more reduction in volatile solids. Volatile solids destruction is measured weight by volume average ((Vol. Solids Reduction = VS in - VS out / (VS in -((VS in * VS out)) (Use Average). The sludge is also air dried in windrows for further vector attraction reduction. The dry solids in windrows are between 65% to 80% total volatile solids reduction before land application.

RE: Flows From: Primary North and Primary South Raw sludge Average: Total solids (change % to Mg/l (10000) (NRS & SRS): Total Vol Solids (NRS & SRS): Total C-2 (wasting) cake flow gal: C-1 (digested) Solids (mg/L) cake: C-1 Vol solids cake (mg/L): C-2 solids cake (mg/L): C-2 Vol Solids cake (mg/L) Cake flow from Rotary Drum Thicker to digester.

CERTIFICATION STATEMENT

I certify under the penalty of law, that the pathogen requirements in Part I.C.2, one of the vector attraction alternatives in Part I.C.3, the practices in part I.D (if necessary) (including practices in Part I.D.13 if the table 4 annual pollutant limits are used) and the site restrictions in part I.C.2 (if necessary) have been met. This determination has been made under my direction and supervision in accordance with information used to determine that the requirements, the vector attraction reduction requirements, the management practices and the site restrictions have been met. I am aware that there are significant penalties for false certification including the possibility imprisonment.

Signature

Jim Hughes, Manager

Water Reclamation Division

H. Best management practices are accomplished by applying biosolids at a whole sludge application rate that is less than or equal to the agronomic rate for the specific site and plant species. The Biosolids are applied so that it does not adversely affect a threatened or endangered species.

Biosolids are not dispersed on sites that are flooded or snow covered, frozen ground with a slope of three percent or more to prevent run off into wetland or surface water. A buffer zone of thirty-five feet from waterways, stock wells, and surface water is observed. Biosolids land applications are prohibited to sites where the available phosphorous content of the existing soil exceeds 400 pounds per acre.

Stored Biosolids on the plant facility remain in windrows for two years or less. The Biosolids are land applied in the winter, spring and fall of the year, weather permitting. Biosolids and soil are analytically tested before disposal. Cheyenne's sludge management practice ensures compliance with both Federal and State parameters and provides for long term Biosolids procedures with little or no detriment to the environment, while enhancing the native grass and field crop production of those participating ranchers and farmers who utilize Biosolids as a fertilizer supplement and soil conditioner.

CERTIFICATION STATEMENT

I certify under the penalty of law that the pathogen requirements in Part I.C.2, one of the vector attraction reduction alternatives in Part I.C.3, the management practices in part I.D (if necessary) (including in the practices in Part I.D.13 if the table 4 annual pollutant limits are used) and the site restrictions in Part I.C.2 (if necessary) have been met. This determination has been made under my direction and supervision in accordance with the system designed to assure that qualified personal properly gather and evaluate the information used to determine that the pathogen requirements, the management practices and the site restrictions have been met. I am aware that there are significant penalties for false certification including the possibility of imprisonment.

Signature

Jim Hughes, Manager

Water Reclamation Division Attachment: #7.

Dry Creek Water Reclamation Facility

I. Site restrictions are first achieved through the quality of sewage sludge product which has been stabilized to reduce pathogenic organisms, which has been dried to a solids concentration of sixty percentile or greater and contains no hazardous or toxic compounds or chemicals in concentrations which exceed those authorized by the USA EPA REGION VIII and WYOMING DEQ for land application in Part C.1, Specific Limitations and Self Monitoring Requirements and Chemical Pollutant Limitations.

The dry sludge that is produced is class \underline{A} and \underline{B} which are applied primarily to range land. Before applying sewage sludge on rangeland, pastureland, farm land, or fields, soil samples have been collected and have had the appropriate soil analysis conducted.

The Class B Sludge with respect to pathogens has been in compliance with the entire site restrictions listed in Part I.C.2. No sludge or material derived from sludge exceeds the limits in Table 3 Part I.C.1. The Class A pathogen reduction limits in Part I.C.2 meets the first 4 vector attraction reduction alternatives in Part I.C.3. There are sufficient management practices used to prevent malfunctions and deterioration, operator errors and discharges which may cause or lead to the release of sludge to the environment, a threat to human health or a nuisance.

CERTIFICATION STATEMENT

I certify under the penalty of law, that the pathogen requirements in Part I.C.2, one of the vector attraction reduction alternatives in Part I.C.3, the management practices in Part I.D (if necessary) including the practice in Part I.D.13 if the table 4 annual pollutant limits are used) and the site restrictions in Part I.C.2 (if necessary) have been met. This determination has been made under my direction and supervision in accordance with the system designed to assure that qualified personnel properly gather and evaluate the information used to determine that the pathogen requirements, the vector attractions reduction requirements, the management practices and the restrictions have been met. I am aware that there are significant penalties for false certification including the possibility of imprisonment.

Signature J Jim Hughes, Manager



ANALYTICAL RESULTS

DRY CREEK WWTP LABORATORY

Cheyenne BOPU 8911 Campstool Road Cheyenne, Wyoming 82007 Phone: 307-635-3163 Fax: 307-635-6833

Date Sampled: 08/13/13

Date Received: 08/13/13

Sample Location: Zone D Sample Matrix: Compost

Sampled By: CB

Date Reported: 08/27/13

Date Fecal Analyzed: 08/13/13 Date Solids Analyzed: 08/20/13

Analyst(s): mw

EPA Method/Total Solids:

SM 19th Ed 2540B

EPA Method/Volatile Solids: SM 19th Ed 2540E

EPA Method/Fecal Coliform: SM 18th Ed 9221E (A-1 Media)

Row #	Total Solids %	Volatile Solids%	Fecal Coliform/ Dry Gram Sludge
1	79.2	47.8	455
2	60.4	41.9	<538
3	69.3	30.8	<468
4	69.6	41.0	<467
5	63.8	44.2	<509

Comments:

All data meets QA/QC requirements; please see QA/QC files in Dry Creek Laboratory. NA = Not Analyzed

Kent Loader, Laboratory Supervisor

Dry Creek WRF Laboratory For: Fecal, TS & VS

Identification Reporting: No. WYSL - 22934

Permit No. WYG - <u>650002</u>

(Cheyenne BOPU) Dry Creek Water Reclamation Facility

Samples and Analytical

Quality Assurance/Quality Control OA/QC

Date: 8-13-13 | Time: 10:0.5 | [] AM] PM

Analytical Sampling Records (Cheyenne BOPU) Dry Creek WRF Laboratory

[] Dates and time of samples collected
[] Sampling location documented
[] Sampling types appropriate
[] Sampling volumes recorded
[] Name of person sampling
[] Types of sampling containers
[] Methods of preservation
[] Sampling quality assurance/ quality control QA/QC available
[] Pollutant limits red flagged if over mg/kg (Table 1,2,3,4 and Section 503.13) (Class A and B Biosolids)
[] Certification statement signed with each laboratory analytical report:
1. Pathogen reduction
2. Vector attraction reduction operates at Dry Creek WRF analysis samples. Results from daily sheets and results, recorded daily.
3. Management Practices
4. Site restrictions
[] Class A sludge: average temperature, (volatile solids percent) and total solids Dry sludge) once a month. Turn rows once a month, <u>weather permitting</u> .
[] Chain of custody recorded
Date: 8 -13-13 Time: 10 105 1 AM] PM

Analytical Records From: (Cheyenne BOPU) Dry Creek WRF To: (Cheyenne BOPU) Dry Creek WRF Laboratory

[] Date and time of samples analysis
[] Name of analyst
[] All analyses are reported on dry weight basis
[] Dry Creek WRF Laboratory 8911 Campstool Rd. Cheyenne, WY 82007 Ph: 307-635-3163 Fax: 307-635-6833
[] Analytical quality assurance/quality control (QA/QC) available
[] Analytical results available
[] Chain of custody record

Date: 8-13-13 Time: 10:05 [] AM [] PM

Analytical Records From: (Cheyenne BOPU) Dry Creek WRF To: (Cheyenne BOPU) Dry Creek WRF Laboratory

] Date and time of sample
] Name of analyst
] Analytical methods used
Analyses and calculation results properly documented or verified
All analysis are reported on dry weight basis with the exception of volatile solids or total solids in percent. (1quart plastic bag 450 grams) (7 quart plastic bags 3150 grams).
Volatile solids and total solids samples need to be analyzed six times a year for Class B Biosolids and 12 times a year for Class A Biosolids.
Analytical quality assurance/quality control (QA/QC) available
] Analytical results available
Chain of custody record

Zone: 0 Rows: -2 Date: 8-13-13 Time: 10.65 [] AM [] PM

Analytical Sample Containers From: (Cheyenne BOPU) Dry Creek WRF To: (Cheyenne BOPU) Dry Creek WRF Laboratory

Dry Sludge for fecal results in MPN, and percent solids for Class A or Class B Biosolids. 1 quart Plastic bags 450 grams: 7 Quart Plastic bags total of 3150 grams. Fecal samples and results are analyzed at the Dry Creek WRF Laboratory in with six hours of the holding time. The results of fecal samples in (MPN) and (percent solids) need to be analyzed in, *February, April, June, August, October, and December. **January, March, May, July, September and November; test for TS and VS. Class A test for Helminth ova density limits > 1 egg/4g TS; Enteric virus density limits of > 1 PFU/4g

- 1. *' **Class A sludge < 1000 MPN/gram. (Test 12 times a year for TS and VS).
- 2. * Class B sludge < 2,000,000 MPN/gram
- 3. Percent solids, 75 % or better for Class A Biosolids and Class B Biosolids.
- 4. Chain of custody record

Zone: [] Rows: [] - [] Date: [] Time: [] Time: [] [] [] [] PM

Project Name: B1'05011' 65
Location: Dry Creek WRF.
Address: 8911 Camps rool Rd.
City: Cheyenne State: 4, y Zip Code: \$2007.
City: Cheyenre State: (1, y Zip Code: \$2007. Samples Collected by: Chib Babill. [Date/Time: 8-13-13 / 10:45]
Analytical Certification
This certification must be completed by the Analytical Laboratory performing service for the Cheyenne Board of Public Utilities and submitted with each "Analytical Report.
"I certify that these analysis and resulting report (s) were prepared under my direction and supervision in accordance with a system designed to assure that qualified personal properly analyze all samples and accurately report the results. I certify that all analysis were performed in accordance with method approved for wastewater under the latest revision to 40 CFR Part 503 Sludge Regulation. Based on my inquiry of the person or persons who manage the system, or those person directly responsible for analyzing, the wastewater samples and generating the report (s), the analysis, report, and information submitted is to the best on my knowledge and belief, true, accurate, and completed."
Name of Laboratory: Dvy Cleek wake.
Address: 8911 Camp Stool Rd.
City: Cheyenne State: Cy Zip Code: \$2007.
Name of Analyst: Lent Coch.
This Certification is signed by:
\mathcal{L}
Date: 10.29.13 Time: 8 JAM [] PM







Cheyenne Board of Public Utilities Water Reclamation Laboratory

Chain of Custody and Analytical Request Record
PLEASE PRINT CLEARLY, provide as much information as possible

Page _____ of

Client's Name: 1 Clost URF Contact Name: 1 Sampler's Name (if other than Contact):													
Report Required For:				Number of Containers Sample Type	ANAL	YSIS	REC	UES	ובט	How <u>Preserved</u>	Sample <u>Type</u>	Other <u>Information</u>	Analysis Completed
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SAMPLE IDENTIFICATION Collection (Name, Location, etc.)		<u>Q</u> ther MATRIX	4										
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Signed	client:	Lab disposal:							_	Log#	735		

Copies to:

White - Book in Laboratory

Yellow - Laboratory Hard Copy

Pink - Client

Attachment: #4. Dry Creek Water Reclamation Facility

F. Pathogen reduction is accomplished through anaerobic digestion. The primary and secondary digested sludge is treated in the absence of air for mean cell residence time and temperature between 25 and 35 days at 92 to 100 degrees Fahrenheit. Air dried sludge is obtained with a tractor aerator on paved drying beds and on site unpaved storage area in windrows that are turned approximately once a month dependant on the weather conditions.

The Biosolids production (dry weight) at the Dry Creek WRF is over 1500 metric tons a year. Therefore samples are collected six times a year (February, April, May, June, August, October, and December). The laboratories analyze the dry samples for metals, nutrients, organics pathogens, volatile solids and total solids.

CERTIFICATION STATEMENT

I certify under the penalty of law, that the pathogen requirements in Part I.C.3, the management practices in Part I.D (if necessary) (including the practice in part I.D.13 if the table 4 annual pollutant limits are used) and the site restrictions in Part I.C.2 (if necessary) have been met. This determination has been made under my direction and supervision in accordance with the system designed to assure that qualified personnel properly gather and evaluate the information used to determine that pathogen requirements, the vector attraction reduction requirements, the management practices and the site restrictions have been met. I am aware that there are significant penalties for false certification including the possibility of imprisonment.

Signature

Jim Hughes, Manager

Water Reclamation Division

Attachment: #5. Dry Creek Water Reclamation Facility

G. Vector attraction reduction requirements are met through anaerobic digestion when there is thirty eight percent or more reduction in volatile solids. Volatile solids destruction is measured weight by volume average ((Vol. Solids Reduction = VS in - VS out / (VS in -((VS in * VS out)) (Use Average). The sludge is also air dried in windrows for further vector attraction reduction. The dry solids in windrows are between 65% to 80% total volatile solids reduction before land application.

RE: Flows From: Primary North and Primary South Raw sludge Average: Total solids (change % to Mg/l (10000) (NRS & SRS): Total Vol Solids (NRS & SRS): Total C-2 (wasting) cake flow gal: C-1 (digested) Solids (mg/L) cake: C-1 Vol solids cake (mg/L): C-2 solids cake (mg/L): C-2 Vol Solids cake (mg/L) Cake flow from Rotary Drum Thicker to digester.

CERTIFICATION STATEMENT

I certify under the penalty of law, that the pathogen requirements in Part I.C.2, one of the vector attraction alternatives in Part I.C.3, the management (if practices in part I.D necessary) (including practices in Part I.D.13 if the table 4 annual pollutant limits are used) and the site restrictions in part I.C.2 (if necessary) have been met. This determination has been made under my direction and supervision in accordance with information used to determine that the requirements, the vector attraction reduction requirements, the management practices and the site restrictions have been met. I am aware that there are significant penalties for false certification including the possibility imprisonment.

Signature

Jim Hughes, Manager

Water Reclamation Division

Attachment: #6. Dry Creek Water Reclamation Facility

H. Best management practices are accomplished by applying biosolids at a whole sludge application rate that is less than or equal to the agronomic rate for the specific site and plant species. The Biosolids are applied so that it does not adversely affect a threatened or endangered species.

Biosolids are not dispersed on sites that are flooded or snow covered, frozen ground with a slope of three percent or more to prevent run off into wetland or surface water. A buffer zone of thirty-five feet from waterways, stock wells, and surface water is observed. Biosolids land applications are prohibited to sites where the available phosphorous content of the existing soil exceeds 400 pounds per acre.

Stored Biosolids on the plant facility remain in windrows for two years or less. The Biosolids are land applied in the winter, spring and fall of the year, weather permitting. Biosolids and soil are analytically tested before disposal. Cheyenne's sludge management practice ensures compliance with both Federal and State parameters and provides for long term Biosolids procedures with little or no detriment to the environment, while enhancing the native grass and field crop production of those participating ranchers and farmers who utilize Biosolids as a fertilizer supplement and soil conditioner.

CERTIFICATION STATEMENT

I certify under the penalty of law that the pathogen requirements in Part I.C.2, one of the vector attraction I.C.3, reduction alternatives in Part the management practices in part I.D (if necessary) (including in the practices in Part I.D.13 if the table 4 annual pollutant limits are used) and the site restrictions in Part I.C.2 (if necessary) have been met. This determination has been made under my direction and supervision in accordance with the system designed to assure that qualified personal properly gather and evaluate the information used to determine that the pathogen requirements, the management practices and the site restrictions have been met. I am aware that there are significant penalties for false certification including the possibility of imprisonment.

Signature

Jim Hughes, Manager

Water Reclamation Division Attachment: #7.

Dry Creek Water Reclamation Facility

I. Site restrictions are first achieved through the quality of sewage sludge product which has been stabilized to reduce pathogenic organisms, which has been dried to a solids concentration of sixty percentile or greater and contains no hazardous or toxic compounds or chemicals in concentrations which exceed those authorized by the USA EPA REGION VIII and WYOMING DEQ for land application in Part C.1, Specific Limitations and Self Monitoring Requirements and Chemical Pollutant Limitations.

The dry sludge that is produced is class A and B which are applied primarily to range land. Before applying sewage sludge on rangeland, pastureland, farm land, or fields, soil samples have been collected and have had the appropriate soil analysis conducted.

The <u>Class B</u> Sludge with respect to pathogens has been in compliance with the entire site restrictions listed in Part I.C.2. No sludge or material derived from sludge exceeds the limits in Table 3 Part I.C.1. The <u>Class A</u> pathogen reduction limits in Part I.C.2 meets the first 4 vector attraction reduction alternatives in Part I.C.3. There are sufficient management practices used to prevent malfunctions and deterioration, operator errors and discharges which may cause or lead to the release of sludge to the environment, a threat to human health or a nuisance.

CERTIFICATION STATEMENT

I certify under the penalty of law, that the pathogen requirements in Part I.C.2, one of the vector attraction reduction alternatives in Part I.C.3, the management practices in Part I.D (if necessary) including the practice in Part I.D.13 if the table 4 annual pollutant limits are used) and the site restrictions in Part I.C.2 (if necessary) have been met. This determination has been made under my direction and supervision in accordance with the system designed to assure that qualified personnel properly gather and evaluate the information used to determine that the pathogen requirements, the vector attractions reduction the management practices requirements, and the restrictions have been met. I am aware that there are significant penalties for false certification including the possibility of imprisonment.

Signature |

Jim Hughes, Manager



ANALYTICAL RESULTS

DRY CREEK WWTP LABORATORY

Cheyenne BOPU 8911 Campstool Road Cheyenne, Wyoming 82007 Phone: 307-635-3163 Fax: 307-635-6833

Date Sampled: 08/20/13

Date Received: 08/20/13

Sample Location: Zone C Sample Matrix: Compost

Sampled By: CB

Date Reported: 10/15/13

Date Fecal Analyzed: 08/20/13 Date Solids Analyzed: 08/20/13

Analyst(s): mw

EPA Method/Total Solids:

SM 19th Ed 2540B

EPA Method/Volatile Solids: SM 19th Ed 2540E

EPA Method/Fecal Coliform: SM 18th Ed 9221E (A-1 Media)

Row#	Total Solids %	Volatile Solids%	Fecal Coliform/ Dry Gram Sludge			
1	69.0	38.8	<471			
2	76.0	33.5	1,066			
3	81.7	47.3	<398			
4	70.9	49.3	<459			
5	85.7	41.9	<379			
6	81.3	46.9	<400			
7	74.7	51.1	<434			

Comments:

All data meets QA/QC requirements; please see QA/QC files in Dry Creek Laboratory. NA = Not Analyzed

Kent Loader, Laboratory Supervisor

Page 1 of 1

Dry Creek WRF Laboratory For: Fecal, TS & VS

Identification Reporting: No. WYSL - 22934

Permit No. WYG - <u>650002</u>

(Cheyenne BOPU) Dry Creek Water Reclamation Facility

Samples and Analytical

Quality Assurance/Quality Control OA/QC

Date: 8 - 20 - 13 | Time: 9:20 Hm | [] AM |] PM

Analytical Sampling Records (Cheyenne BOPU) Dry Creek WRF Laboratory

[] Dates and time of samples collected
[] Sampling location documented
[] Sampling types appropriate
[] Sampling volumes recorded
[] Name of person sampling
[] Types of sampling containers
[] Methods of preservation
[] Sampling quality assurance/ quality control QA/QC available
[] Pollutant limits red flagged if over mg/kg (Table 1,2,3,4 and Section 503.13) (Class A and B Biosolids)
ertification statement signed with each laboratory analytical report:
1. Pathogen reduction
2. Vector attraction reduction operates at Dry Creek WRF analysis samples. Results from daily sheets and results, recorded daily.
3. Management Practices
4. Site restrictions
[] Class A sludge: average temperature, (volatile solids percent) and total solids Dry sludge) once a month. Turn rows once a month, <u>weather permitting</u> .
[] Chain of custody recorded
Date: $8 - 20 - 13$ Time: $9:20$ [] AN [] PM

Analytical Records From: (Cheyenne BOPU) Dry Creek WRF To: (Cheyenne BOPU) Dry Creek WRF Laboratory

Date and time of samples analysis
[] Name of analyst
All analyses are reported on dry weight basis
Dry Creek WRF Laboratory 8911 Campstool Rd. Cheyenne, WY 82007 Ph: 307-635-3163 Fax: 307-635-6833
[] Analytical quality assurance/quality control (QA/QC) available
] Analytical results available
] Chain of custody record

Analytical Sample Containers From: (Cheyenne BOPU) Dry Creek WRF To: (Cheyenne BOPU) Dry Creek WRF Laboratory

Dry Sludge for fecal results in MPN, and percent solids for Class A or Class B Biosolids. 1 quart Plastic bags 450 grams: 7 Quart Plastic bags total of 3150 grams. Fecal samples and results are analyzed at the Dry Creek WRF Laboratory in with six hours of the holding time. The results of fecal samples in (MPN) and (percent solids) need to be analyzed in, *February, April, June, August, October, and December. **January, March, May, July, September and November; test for TS and VS. Class A test for Helminth ova density limits > 1 egg/4g TS; Enteric virus density limits of > 1 PFU/4g

- 1. *' **Class A sludge < 1000 MPN/gram. (Test 12 times a year for TS and VS).
- 2. * Class B sludge < 2,000,000 MPN/gram
- 3. Percent solids, 75 % or better for Class A Biosolids and Class B Biosolids.
- 4. Chain of custody record

Zone: \bigcirc Rows: \bigcirc - \bigcirc Date: \bigcirc - \bigcirc Time: \bigcirc Time: \bigcirc [] AM [] PM

Analytical Sample Containers From: (Cheyenne BOPU) Dry Creek WRF To: (Cheyenne BOPU) Dry Creek WRF Laboratory

Dry Sludge for fecal results in MPN, and percent solids for Class A or Class B Biosolids. 1 quart Plastic bags 450 grams: 7 Quart Plastic bags total of 3150 grams. Fecal samples and results are analyzed at the Dry Creek WRF Laboratory in with six hours of the holding time. The results of fecal samples in (MPN) and (percent solids) need to be analyzed in, *February, April, June, August, October, and December. **January, March, May, July, September and November; test for TS and VS. Class A test for Helminth ova density limits > 1 egg/4g TS; Enteric virus density limits of > 1 PFU/4g

- 1. *' **Class A sludge < 1000 MPN/gram. (Test 12 times a year for TS and VS).
- 2. * Class B sludge < 2,000,000 MPN/gram
- 3. Percent solids, 75 % or better for Class A Biosolids and Class B Biosolids.
- 4. Chain of custody record

Zone: C Rows: 1 - 7 Date: 8 - 20 - 13 Time: 9:20 [] AM [] PM

Project Name: <u>Bi 050 1125</u> .
Location: Dry Creek WRF.
Address: 2911 CampstoolRd.
City: Chevenne State: WYU Zip Code: 8207.
Samples Collected by: Chet Barber. [Date/Time: 8-20-13/9/2014)
Analytical Certification
This certification must be completed by the Analytical Laboratory performing service for the Cheyenne Board of Public Utilities and submitted with each "Analytical Report.
"I certify that these analysis and resulting report (s) were prepared under my direction and supervision in accordance with a system designed to assure that qualified personal properly analyze all samples and accurately report the results. I certify that all analysis were performed in accordance with method approved for wastewater under the latest revision to 40 CFR Part 503 Sludge Regulation. Based on my inquiry of the person or persons who manage the system, or those person directly responsible for analyzing, the wastewater samples and generating the report (s), the analysis, report, and information submitted is to the best on my knowledge and belief, true, accurate, and completed."
Name of Laboratory: Dry Creek WRF.
Address: 891/ Camp stool Rd,
City: Cheyenne State: Uy Zip Code: 82007. Name of Analyst: Kent Square State: Square Squa
This Certification is signed by:
Date: /0.29, /3 Time: AM [] PM

Cheyenne Board of Public Utilities Water Reclamation Laboratory

Chain of Custody and Analytical Request Record
PLEASE PRINT CLEARLY, provide as much information as possible

Page		of_	
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Client's Name: 104 CARRURE Contact Name: At Burker Sampler's Name (if other than Contact):									
Report Required For: 13,050 1,15 20ne C Rows		Cor Sam	ntainers	LYSIS REC	1 1	How <u>Preserved</u>	Sample <u>Type</u>	Other <u>Information</u>	Analysis <u>Completed</u>
Zonec Rows	1-7)	Δir <u>S</u> oil <u>Y</u> eç	r Water ls/Solids getation oassay			HNO₃ H₂SO₄ 4°C HCL None	Grab or Composite	(pH, Field Analysis, etc.)	Yes / No (Lab use only)
SAMPLE IDENTIFICATION (Name, Location, etc.)	Date	Collection Collection M.	Other ATRIX	72		, and the second			<u>)</u>
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Signed Sample Disposal	: Return to	client:		disposal:	Log#	739			

Copies to:

White - Book in Laboratory

Yellow - Laboratory Hard Copy

Pink - Client

Attachment: #4. Dry Creek Water Reclamation Facility

F. Pathogen reduction is accomplished through anaerobic digestion. The primary and secondary digested sludge is treated in the absence of air for mean cell residence time and temperature between 25 and 35 days at 92 to 100 degrees Fahrenheit. Air dried sludge is obtained with a tractor aerator on paved drying beds and on site unpaved storage area in windrows that are turned approximately once a month dependant on the weather conditions.

The Biosolids production (dry weight) at the Dry Creek WRF is over 1500 metric tons a year. Therefore samples are collected six times a year (February, April, May, June, August, October, and December). The laboratories analyze the dry samples for metals, nutrients, organics pathogens, volatile solids and total solids.

CERTIFICATION STATEMENT

I certify under the penalty of law, that the pathogen requirements in Part I.C.3, the management practices in Part I.D (if necessary) (including the practice in part I. D.13 if the table 4 annual pollutant limits are used) and the site restrictions in Part I.C.2 (if necessary) have been met. This determination has been made under my direction and supervision in accordance with the system designed to assure that qualified personnel properly gather and evaluate the information used to determine that pathogen requirements, the vector attraction reduction requirements, the management practices and the site restrictions have been met. I am aware that there are significant penalties for false certification including the possibility of imprisonment.

Signature

Jim Hughes, Manager

Water Reclamation Division

Attachment: #5.

Dry Creek Water Reclamation Facility

G. Vector attraction reduction requirements are met through anaerobic digestion when there is thirty eight percent or more reduction in volatile solids. Volatile solids destruction is measured weight by volume average ((Vol. Solids Reduction = VS in - VS out / (VS in -((VS in * VS out)) (Use Average). The sludge is also air dried in windrows for further vector attraction reduction. The dry solids in windrows are between 65% to 80% total volatile solids reduction before land application.

RE: Flows From: Primary North and Primary South Raw sludge Average: Total solids (change % to Mg/l (10000) (NRS & SRS): Total Vol Solids (NRS & SRS): Total C-2 (wasting) cake flow gal: C-1 (digested) Solids (mg/L) cake: C-1 Vol solids cake (mg/L): C-2 solids cake (mg/L): C-2 Vol Solids cake (mg/L) Cake flow from Rotary Drum Thicker to digester.

CERTIFICATION STATEMENT

I certify under the penalty of law, that the pathogen requirements in Part I.C.2, one of the vector attraction reduction alternatives in Part I.C.3, the management practices in part I.D (if necessary) (including practices in Part I.D.13 if the table 4 annual pollutant limits are used) and the site restrictions in part I.C.2 (if necessary) have been met. This determination has been made under my direction and supervision in accordance with information used to determine that the requirements, the vector attraction reduction requirements, the management practices and the site restrictions have been met. I am aware that there are significant penalties for false certification including the possibility imprisonment.

Signature

Jim Hughes, Manager

Water Reclamation Division

Attachment: #6. Dry Creek Water Reclamation Facility

H. Best management practices are accomplished by applying biosolids at a whole sludge application rate that is less than or equal to the agronomic rate for the specific site and plant species. The Biosolids are applied so that it does not adversely affect a threatened or endangered species.

Biosolids are not dispersed on sites that are flooded or snow covered, frozen ground with a slope of three percent or more to prevent run off into wetland or surface water. A buffer zone of thirty-five feet from waterways, stock wells, and surface water is observed. Biosolids land applications are prohibited to sites where the available phosphorous content of the existing soil exceeds 400 pounds per acre.

Stored Biosolids on the plant facility remain in windrows for two years or less. The Biosolids are land applied in the winter, spring and fall of the year, weather permitting. Biosolids and soil are analytically tested before disposal. Cheyenne's sludge management practice ensures compliance with both Federal and State parameters and provides for long term Biosolids procedures with little or no detriment to the environment, while enhancing the native grass and field crop production of those participating ranchers and farmers who utilize Biosolids as a fertilizer supplement and soil conditioner.

CERTIFICATION STATEMENT

I certify under the penalty of law that the pathogen requirements in Part I.C.2, one of the vector attraction reduction alternatives I.C.3, in Part the management practices in part I.D (if necessary) (including in the practices in Part I.D.13 if the table 4 annual pollutant limits are used) and the site restrictions in Part I.C.2 (if necessary) have been met. This determination has been made under my direction and supervision in accordance with the system designed to assure that qualified personal properly gather and evaluate the information used to determine that the pathogen requirements, the management practices and the site restrictions have been met. I am aware that there are significant penalties for false certification including the possibility of imprisonment.

Signature

Jiṁ Hugheš, Manager

Water Reclamation Division Attachment: #7.

Dry Creek Water Reclamation Facility

I. Site restrictions are first achieved through the quality of sewage sludge product which has been stabilized to reduce pathogenic organisms, which has been dried to a solids concentration of sixty percentile or greater and contains no hazardous or toxic compounds or chemicals in concentrations which exceed those authorized by the USA EPA REGION VIII and WYOMING DEQ for land application in Part C.1, Specific Limitations and Self Monitoring Requirements and Chemical Pollutant Limitations.

The dry sludge that is produced is class A and B which are applied primarily to range land. Before applying sewage sludge on rangeland, pastureland, farm land, or fields, soil samples have been collected and have had the appropriate soil analysis conducted.

The <u>Class B</u> Sludge with respect to pathogens has been in compliance with the entire site restrictions listed in Part I.C.2. No sludge or material derived from sludge exceeds the limits in Table 3 Part I.C.1. The <u>Class A</u> pathogen reduction limits in Part I.C.2 meets the first 4 vector attraction reduction alternatives in Part I.C.3. There are sufficient management practices used to prevent malfunctions and deterioration, operator errors and discharges which may cause or lead to the release of sludge to the environment, a threat to human health or a nuisance.

CERTIFICATION STATEMENT

I certify under the penalty of law, that the pathogen requirements in Part I.C.2, one of the vector attraction reduction alternatives in I.C.3, Part the management practices in Part I.D (if necessary) including the practice in Part I.D.13 if the table 4 annual pollutant limits are used) and the site restrictions in Part I.C.2 (if necessary) have been met. This determination has been made under my direction and supervision in accordance with the system designed to assure that qualified personnel properly gather and evaluate the information used to determine that the pathogen requirements, the vector attractions reduction requirements, the management practices and the restrictions have been met. I am aware that there are significant penalties for false certification including the possibility of imprisonment.

Signature 8

Jim Hughes, Manager



ANALYTICAL RESULTS

DRY CREEK WWTP LABORATORY

Cheyenne BOPU 8911 Campstool Road Cheyenne, Wyoming 82007 Phone: 307-635-3163 Fax: 307-635-6833

Date Sampled: 08/13/13

Date Received: 08/13/13

Sample Location: Zone A Sample Matrix: Compost

Sampled By: CB

Date Reported: 08/27/13

Date Fecal Analyzed: 08/13/13 Date Solids Analyzed: 08/20/13

Analyst(s): mw

EPA Method/Total Solids:

SM 19th Ed 2540B

EPA Method/Volatile Solids: SM 19th Ed 2540E

EPA Method/Fecal Coliform: SM 18th Ed 9221E (A-1 Media)

Fecal Coliform/

Row #	Total Solids %	Volatile Solids%	Dry Gram Sludge
1	83.7	24.6	<388
2	68.9	23.3	<472 .
3	73.1	26.7	<444
4	63.0	49.5	1,143
5	71.6	36.4	<454
6	65.2	46.8	<498
7	75.8	36.3	<428
8	79.5	52.7	<409
9	72.6	50.0	<447

Comments:

All data meets QA/QC requirements; please see QA/QC files in Dry Creek Laboratory.

NA → Not Analyzed

Kent Loader, Laboratory Supervisor

8.27-13

Date:

Dry Creek WRF Laboratory For: Fecal, TS & VS

Identification Reporting: No. WYSL - 22934

Permit No. WYG - <u>650002</u>

(Cheyenne BOPU) Dry Creek Water Reclamation Facility

Samples and Analytical

Quality Assurance/Quality Control OA/QC

Date: 8-13-13 | Time: 10:05 | [] AM-[] PM

Analytical Sampling Records (Cheyenne BOPU) Dry Creek WRF Laboratory

[] Dates and time of samples collected
[] Sampling location documented
[] Sampling types appropriate
[] Sampling volumes recorded
[] Name of person sampling
[] Types of sampling containers
[] Methods of preservation
[] Sampling quality assurance/ quality control QA/QC available
[] Pollutant limits red flagged if over mg/kg (Table 1,2,3,4 and Section 503.13) (Class A and B Biosolids)
[] Certification statement signed with each laboratory analytical report:
1. Pathogen reduction
2. Vector attraction reduction operates at Dry Creek WRF analysis samples. Results from daily sheets and results, recorded daily.
3. Management Practices
4. Site restrictions
[] Class A sludge: average temperature, (volatile solids percent) and total solids Dry sludge) once a month. Turn rows once a month, <u>weather permitting</u> .
[] Chain of custody recorded
Date: 8-13-13 Time: 10:05 [] AM [] PM

Analytical Records From: (Cheyenne BOPU) Dry Creek WRF To: (Cheyenne BOPU) Dry Creek WRF Laboratory

[] Date and time of samples analysis
[] Name of analyst
[] All analyses are reported on dry weight basis
[] Dry Creek WRF Laboratory
8911 Campstool Rd.
Cheyenne, WY 82007
Ph: 307-635-3163
Fax: 307-635-6833
[] Analytical quality assurance/quality control (QA/QC) available
[] Analytical results available
[] Chain of custody record

Date: 8-13-13 | Time: 10:05 | [] AM: |] PM

Analytical Records From: (Cheyenne BOPU) Dry Creek WRF To: (Cheyenne BOPU) Dry Creek WRF Laboratory

	Date and time of sample
[]	Name of analyst
[]	Analytical methods used
	Analyses and calculation results properly documented or verified
	All analysis are reported on dry weight basis with the exception of volatile solids or total solids in percent. (1quart plastic bag 450 grams) (7 quart plastic bags 3150 grams).
	Volatile solids and total solids samples need to be analyzed six times a year for Class B Biosolids and 12 times a year for Class A Biosolids.
[]	Analytical quality assurance/quality control (QA/QC) available
	Analytical results available
	Chain of custody record

Zone: A Rows: 1 - 9 Date: 8 - 13 - 13 Time: 10.05 [] AM [] PM

Analytical Sample Containers From: (Cheyenne BOPU) Dry Creek WRF To: (Cheyenne BOPU) Dry Creek WRF Laboratory

Dry Sludge for fecal results in MPN, and percent solids for Class A or Class B Biosolids. 1 quart Plastic bags 450 grams: 7 Quart Plastic bags total of 3150 grams. Fecal samples and results are analyzed at the Dry Creek WRF Laboratory in with six hours of the holding time. The results of fecal samples in (MPN) and (percent solids) need to be analyzed in, *February, April, June, August, October, and December. **January, March, May, July, September and November; test for TS and VS. Class A test for Helminth ova density limits > 1 egg/4g TS; Enteric virus density limits of > 1 PFU/4g

- 1. *' **Class A sludge < 1000 MPN/gram. (Test 12 times a year for TS and VS).
- 2. * Class B sludge < 2,000,000 MPN/gram
- 3. Percent solids, 75 % or better for Class A Biosolids and Class B Biosolids.
- 4. Chain of custody record

Zone: A Rows: $1 - \frac{6}{1}$ Date: $\frac{8 - 13 - 13}{1}$ Time: $\frac{10.65}{1}$ [] AM [] PM

Project Name: 15 5 850 1,65
Location: Dvy CIEEE WRF.
Address: 8911 Camps Two RJ.
City: Cheyenne State: (vy Zip Code: 82007.
City: Cheyenne State: (vy Zip Code: 82007. Samples Collected by: Chef Babell .[Date/Time: 8-13-13/10/05/Am
Analytical Certification
This certification must be completed by the Analytical Laboratory performing service for the Cheyenne Board of Public Utilities and submitted with each "Analytical Report.
"I certify that these analysis and resulting report (s) were prepared under my direction and supervision in accordance with a system designed to assure that qualified personal properly analyze all samples and accurately report the results. I certify that all analysis were performed in accordance with method approved for wastewater under the latest revision to 40 CFR Part 503 Sludge Regulation. Based on my inquiry of the person or persons who manage the system, or those person directly responsible for analyzing, the wastewater samples and generating the report (s), the analysis, report, and information submitted is to the best on my knowledge and belief, true, accurate, and completed."
Name of Laboratory: Dry Creek waf.
Address: 39 11 Camps Tool 81.
City: Cheyenne State: Uy Zip Code: 82007.
Name of Analyst: Lout Lout.
This Certification is signed by:
Date: 10.29:17] Time: S JAM [] PM



Chain of Custody and Analytical Request Record
PLEASE PRINT CLEARLY, provide as much information as possible

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Page _	<u> </u>	of /

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Client's Name:		- · · · · · · · · · · · · · · · · · · ·	me: <u>//</u> /		1311		Sampler's I	Name (if o	ther than Contact):_	
Report Required For		- 7	Number of Containers Sample Typ A W S V B G Air <u>W</u> ater <u>S</u> oils/ <u>S</u> olids <u>V</u> egetation <u>B</u> ioassay	e	SIS REQU	JESTED	Preserved HNO ₃ H ₂ SO ₄ 4°C HCL	Sample Type Grab or Composite	Other <u>Information</u> (pH, Field Analysis, etc.)	Analysis <u>Completed</u> Yes / No (Lab use only)
SAMPLE IDENTI (Name, Location		Collection Collection Date Tire	ction <u>O</u> ther	1-1			None			
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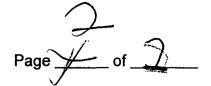
White - Book in Laboratory

Yellow - Laboratory Hard Copy

Pink - Client



Chain of Custody and Analytical Request Record
PLEASE PRINT CLEARLY, provide as much information as possible



Client's Name 1 Contact Name: Chat Paul Sampler's Name (if other than Contact):	
Report Required For: Number of ANALYSIS REQUESTED How Sample Other	Analysis
Containers Preserved Type Information	Completed
Sample Type	
AWSVBO Air Water HNO ₃ Grab H ₂ SO ₄ or etc.)	Yes / No
All yyatel Soils/Solids H ₂ SO ₄ or etc.)	(Lab use only)
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Bioassay None	
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Signed Sample Disposal: Return to client: Lab disposal: Log#	735

Copies to:

White - Book in Laboratory

Yellow - Laboratory Hard Copy

Pink - Client

Attachment: #4. Dry Creek Water Reclamation Facility

F. Pathogen reduction is accomplished through anaerobic digestion. The primary and secondary digested sludge is treated in the absence of air for mean cell residence time and temperature between 25 and 35 days at 92 to 100 degrees Fahrenheit. Air dried sludge is obtained with a tractor aerator on paved drying beds and on site unpaved storage area in windrows that are turned approximately once a month dependant on the weather conditions.

The Biosolids production (dry weight) at the Dry Creek WRF is over 1500 metric tons a year. Therefore samples are collected six times a year (February, April, May, June, August, October, and December). The laboratories analyze the dry samples for metals, nutrients, organics pathogens, volatile solids and total solids.

CERTIFICATION STATEMENT

I certify under the penalty of law, that the pathogen requirements in Part I.C.3, the management practices in Part I.D (if necessary) (including the practice in part I.D.13 if the table 4 annual pollutant limits are used) and the site restrictions in Part I.C.2 (if necessary) have been met. This determination has been made under my direction and supervision in accordance with the system designed to assure that qualified personnel properly gather and evaluate the information used to determine that pathogen requirements, the vector attraction reduction requirements, the management practices and the site restrictions have been met. I am aware that there are significant penalties for false certification including the possibility of imprisonment.

Signature

Jim Wughes, Manager

Water Reclamation Division

Attachment: #5. Dry Creek Water Reclamation Facility

G. Vector attraction reduction requirements are met through anaerobic digestion when there is thirty eight percent or more reduction in volatile solids. Volatile solids destruction is measured weight by volume average ((Vol. Solids Reduction = VS in - VS out / (VS in -((VS in * VS out)) (Use Average). The sludge is also air dried in windrows for further vector attraction reduction. The dry solids in windrows are between 65% to 80% total volatile solids reduction before land application.

RE: Flows From: Primary North and Primary South Raw sludge Average: Total solids (change % to Mg/l (10000) (NRS & SRS): Total Vol Solids (NRS & SRS): Total C-2 (wasting) cake flow gal: C-1 (digested) Solids (mg/L) cake: C-1 Vol solids cake (mg/L): C-2 solids cake (mg/L): C-2 Vol Solids cake (mg/L) Cake flow from Rotary Drum Thicker to digester.

CERTIFICATION STATEMENT

I certify under the penalty of law, that the pathogen requirements in Part I.C.2, one of the vector attraction reduction alternatives in Part I.C.3, the management practices in part I.D (if necessary) (including practices in Part I.D.13 if the table 4 annual pollutant limits are used) and the site restrictions in part I.C.2 (if necessary) have been met. This determination has been made under my direction and supervision in accordance with information used to determine that the pathogen requirements, the vector attraction reduction requirements, the management practices and the site restrictions have been met. I am aware that there are significant penalties for false certification including the possibility imprisonment.

Signature

Jim Hughes, Manager

Water Reclamation Division

H. Best management practices are accomplished by applying biosolids at a whole sludge application rate that is less than or equal to the agronomic rate for the specific site and plant species. The Biosolids are applied so that it does not adversely affect a threatened or endangered species.

Biosolids are not dispersed on sites that are flooded or snow covered, frozen ground with a slope of three percent or more to prevent run off into wetland or surface water. A buffer zone of thirty-five feet from waterways, stock wells, and surface water is observed. Biosolids land applications are prohibited to sites where the available phosphorous content of the existing soil exceeds 400 pounds per acre.

Stored Biosolids on the plant facility remain in windrows for two years or less. The Biosolids are land applied in the winter, spring and fall of the year, weather permitting. Biosolids and soil are analytically tested before disposal. Cheyenne's sludge management practice ensures compliance with both Federal and State parameters and provides for long term Biosolids procedures with little or no detriment to the environment, while enhancing the native grass and field crop production of those participating ranchers and farmers who utilize Biosolids as a fertilizer supplement and soil conditioner.

CERTIFICATION STATEMENT

I certify under the penalty of law that the pathogen requirements in Part I.C.2, one of the vector attraction reduction alternatives in Part I.C.3, the management practices in part I.D (if necessary) (including in the practices in Part I.D.13 if the table 4 annual pollutant limits are used) and the site restrictions in Part I.C.2 (if necessary) have been met. This determination has been made under my direction and supervision in accordance with the system designed to assure that qualified personal properly gather and evaluate the information used to determine that the pathogen requirements, the management practices and the site restrictions have been met. I am aware that there are significant penalties for false certification including the possibility of imprisonment.

Signature

Jim Hughes, Manager

Water Reclamation Division

Attachment: #7.

Dry Creek Water Reclamation Facility

I. Site restrictions are first achieved through the quality of sewage sludge product which has been stabilized to reduce pathogenic organisms, which has been dried to a solids concentration of sixty percentile or greater and contains no hazardous or toxic compounds or chemicals in concentrations which exceed those authorized by the USA EPA REGION VIII and WYOMING DEQ for land application in Part C.1, Specific Limitations and Self Monitoring Requirements and Chemical Pollutant Limitations.

The dry sludge that is produced is class \underline{A} and \underline{B} which are applied primarily to range land. Before applying sewage sludge on rangeland, pastureland, farm land, or fields, soil samples have been collected and have had the appropriate soil analysis conducted.

The <u>Class B</u> Sludge with respect to pathogens has been in compliance with the entire site restrictions listed in Part I.C.2. No sludge or material derived from sludge exceeds the limits in Table 3 Part I.C.1. The <u>Class A</u> pathogen reduction limits in Part I.C.2 meets the first 4 vector attraction reduction alternatives in Part I.C.3. There are sufficient management practices used to prevent malfunctions and deterioration, operator errors and discharges which may cause or lead to the release of sludge to the environment, a threat to human health or a nuisance.

CERTIFICATION STATEMENT

I certify under the penalty of law, that the pathogen requirements in Part I.C.2, one of the vector attraction reduction alternatives in Part I.C.3, the management practices in Part I.D (if necessary) including the practice in Part I.D.13 if the table 4 annual pollutant limits are used) and the site restrictions in Part I.C.2 (if necessary) have been met. This determination has been made under my direction and supervision in accordance with the system designed to assure that qualified personnel properly gather and evaluate the information used to determine that the pathogen requirements, the vector attractions reduction requirements, the management practices and the restrictions have been met. I am aware that there are significant penalties for false certification including the possibility of imprisonment.

Signature X

Jim Hughes, Manager



ANALYTICAL RESULTS

DRY CREEK WWTP LABORATORY

Cheyenne BOPU 8911 Campstool Road Cheyenne, Wyoming 82007 Phone: 307-635-3163 Fax: 307-635-6833

Date Sampled: 06/17/13

Date Received: 06/17/13

Sample Location: Zone E

Sample Matrix: Compost

Sampled By: CB

Date Reported: 08/07/13

Date Fecal Analyzed: 06/17/13 Date Solids Analyzed: 06/20/13

Analyst(s): mw

EPA Method/Total Solids:

SM 19th Ed 2540B

EPA Method/Volatile Solids: SM 19th Ed 2540E

EPA Method/Fecal Coliform: SM 18th Ed 9221E (A-1 Media)

Total Solids %

	Fecal Coliform/
Volatile Solids%	Dry Gram Sludge

	_		
1	88.9	47.1	<366
2	87.5	38.8	<371
3	86.5	43.7	<376 ·
4	88.7	37.8	<366
5	91.3	34.8	<356
6	86.4	43.4	<376
7	90.6	34.0	<358
8	88.8	41.3	<366
9	87.4	47.0	<372

Comments:

Row#

All data meets QA/QC requirements; please see QA/QC files in Dry Creek Laboratory. NA = Not Analyzed

Kent Loader, Laboratory Supervisor

Dry Creek WRF Laboratory For: Fecal, TS & VS

Identification Reporting: No. WYSL - 22934

Permit No. WYG - <u>650002</u>

(Chevenne BOPU) Dry Creek Water Reclamation Facility

Samples and Analytical

Quality Assurance/Quality Control OA/QC

Date: 6-17-13 | Time: 10'140 | [] AM |] PM

<u>Analytical Sampling Records</u> (Cheyenne BOPU) Dry Creek WRF Laboratory

[] Dates and time of samples collected
[] Sampling location documented
[] Sampling types appropriate
[] Sampling volumes recorded
[] Name of person sampling
[] Types of sampling containers
[] Methods of preservation
[] Sampling quality assurance/ quality control QA/QC available
[] Pollutant limits red flagged if over mg/kg (Table 1,2,3,4 and Section 503.13) (Class A and B Biosolids)
[] Certification statement signed with each laboratory analytical report:
1. Pathogen reduction
2. Vector attraction reduction operates at Dry Creek WRF analysis samples. Results from daily sheets and results, recorded daily.
3. Management Practices
4. Site restrictions
[] Class A sludge: average temperature, (volatile solids percent) and total solids Dry sludge) once a month. Turn rows once a month, <u>weather permitting</u> .
[] Chain of custody recorded
Date: 6-17- 1.3 Time: 10'146] [] AM j PM

Analytical Records From: (Cheyenne BOPU) Dry Creek WRF To: (Cheyenne BOPU) Dry Creek WRF Laboratory

[] Date and time of samples analysis
[] Name of analyst
[] All analyses are reported on dry weight basis
[] Dry Creek WRF Laboratory 8911 Campstool Rd. Cheyenne, WY 82007 Ph: 307-635-3163 Fax: 307-635-6833
[] Analytical quality assurance/quality control (QA/QC) available
[] Analytical results available
[] Chain of custody record

Analytical Records From: (Cheyenne BOPU) Dry Creek WRF To: (Cheyenne BOPU) Dry Creek WRF Laboratory

[] Date and time of sample
[] Name of analyst
[] Analytical methods used
[] Analyses and calculation results properly documented or verified
[] All analysis are reported on dry weight basis with the exception of volatile solids or total solids in percent. (1quart plastic bag 450 grams) (7 quart plastic bags 3150 grams).
[] Volatile solids and total solids samples need to be analyzed six times a year for Class B Biosolids and 12 times a year for Class A Biosolids.
[] Analytical quality assurance/quality control (QA/QC) available
[] Analytical results available
[] Chain of custody record

Zone: E | Rows: | - 9 | Date: 6 - 13 - 13 Time: 10 140 | [] AM | PM

Analytical Sample Containers From: (Cheyenne BOPU) Dry Creek WRF To: (Cheyenne BOPU) Dry Creek WRF Laboratory

Dry Sludge for fecal results in MPN, and percent solids for Class A or Class B Biosolids. 1 quart Plastic bags 450 grams: 7 Quart Plastic bags total of 3150 grams. Fecal samples and results are analyzed at the Dry Creek WRF Laboratory in with six hours of the holding time. The results of fecal samples in (MPN) and (percent solids) need to be analyzed in, *February, April, June, August, October, and December. **January, March, May, July, September and November; test for TS and VS. Class A test for Helminth ova density limits > 1 egg/4g TS; Enteric virus density limits of > 1 PFU/4g

- 1. *' **Class A sludge < 1000 MPN/gram. (Test 12 times a year for TS and VS).
- 2. * Class B sludge < 2,000,000 MPN/gram
- 3. Percent solids, 75 % or better for Class A Biosolids and Class B Biosolids.
- 4. Chain of custody record

Zone: \angle Rows: \angle - \underline{G} Date: $\underline{G-17-B}$ Time: $\angle O' \cup \bigcirc \bigcirc$ [] $\triangle M$ [] PM

Project Name: 15,0501.65
Location: Dry Creek MRF.
Address: 8911 Camp 57001 Rd.
City: Cheyenne State: My Zip Code: 82007. Samples Collected by: Chet Bull Date/Time: 6-17-12/10:404m
Samples Collected by: At Bull Date/Time: 6-17-13/10.404m
Analytical Certification
This certification must be completed by the Analytical Laboratory performing service for the Cheyenne Board of Public Utilities and submitted with each "Analytical Report.
"I certify that these analysis and resulting report (s) were prepared under my direction and supervision in accordance with a system designed to assure that qualified personal properly analyze all samples and accurately report the results. I certify that all analysis were performed in accordance with method approved for wastewater under the latest revision to 40 CFR Part 503 Sludge Regulation. Based on my inquiry of the person or persons who manage the system, or those person directly responsible for analyzing, the wastewater samples and generating the report (s), the analysis, report, and information submitted is to the best on my knowledge and belief, true, accurate, and completed."
Name of Laboratory: Dry Creek WRI-
Address: 8911 Camps Tool Re.
City: Cheyenne State: Wy Zip Code: 7207.
Name of Analyst: Leat Local.
This Certification is signed by:
Date: 10.29.(>] Time: AM [] PM



Chain of Custody and Analytical Request Record
PLEASE PRINT CLEARLY, provide as much information as possible

Page	o1	3
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Client's Name: DVY Crepk Luft	Contact Name:	Let Beak)	Sampler's Name (if o	ther than Contact):	
Report Required For:	Nu Co	lumber of ANALYS ontainers	S REQUESTED	How Sample Preserved Type	Other Information	Analysis Completed
Bi 030 1ils 2010 E Rows 7	A W Ai So	mple Type W S V B O Air Water oils/Solids legetation Bioassay		HNO₃ Grab H₂SO₄ or 4°C Composite HCL None	(pH, Field Analysis, etc.)	Yes / No (Lab use only)
	ection Collection ate Time N	Other MATRIX	3			
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Signed	Return to client:	Lab disp			Log#	715
ID# 10×10^{-1} Permit# 10×10^{-1} 10×10^{-1}						

Copies to:

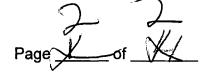
White - Book in Laboratory

Yellow - Laboratory Hard Copy

Pink - Client



Chain of Custody and Analytical Request Record
PLEASE PRINT CLEARLY, provide as much information as possible



Client's Name: <u></u>	Creekw	RE Conta	act Name: <u>/</u>	chat	17	De	W	1		Sampler's l	Name (if o	ther than Contact):_	
Report Required F	or:			Number of	ANAL	YSIS	RE	QUES	ŢED	How	Sample	Other	Analysis
N. W.	12			Containers	3/					Preserved	Туре	<u>Information</u>	Completed
10,000	15 Rows	0 01		Sample Type				1	1	į			
2011PL	: ROWS	0-/	•	AWSVBO	2			-		HNO₃	Grab	(pH, Field Analysis,	Yes / No
 حمول	V	,		<u>Air Water</u> <u>S</u> oils/ <u>S</u> olids	and a					H₂SO₄	or	etc.)	(Lab use only)
				Vegetation	9	1		1		4°C HCL	Composite		·
				<u>B</u> ioassay	$ \mathcal{S} \sqrt{ }$	1.		j		None			
SAMPLE IDEN	TIFICATION	Collection	Collection	<u>O</u> ther	VML	\mathbb{I}^{N}							
(Name, Loca		Date	Time	MATRIX	1					<u>.</u>			
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<u>MUST</u> be Signed	Sample Disposal:	Return to	client		_ Lab c			<u> </u>	<u> </u>	·		Log#	717
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Yellow - Laboratory Hard Copy

Pink - Client

White - Book in Laboratory

Copies to:

Attachment: #4. Dry Creek Water Reclamation Facility

F. Pathogen reduction is accomplished through anaerobic digestion. The primary and secondary digested sludge is treated in the absence of air for mean cell residence time and temperature between 25 and 35 days at 92 to 100 degrees Fahrenheit. Air dried sludge is obtained with a tractor aerator on paved drying beds and on site unpaved storage area in windrows that are turned approximately once a month dependant on the weather conditions.

The Biosolids production (dry weight) at the Dry Creek WRF is over 1500 metric tons a year. Therefore samples are collected six times a year (February, April, May, June, August, October, and December). The laboratories analyze the dry samples for metals, nutrients, organics pathogens, volatile solids and total solids.

CERTIFICATION STATEMENT

I certify under the penalty of law, that the pathogen requirements in Part I.C.3, the management practices in Part I.D (if necessary) (including the practice in part I.D.13 if the table 4 annual pollutant limits are used) and the site restrictions in Part I.C.2 (if necessary) have been met. This determination has been made under my direction and supervision in accordance with the system designed to assure that qualified personnel properly gather and evaluate the information used to determine that pathogen requirements, the vector attraction reduction requirements, the management practices and the site restrictions have been met. I am aware that there are significant penalties for false certification including the possibility of imprisonment.

Signature

Jim Hughes, Manager

Water Reclamation Division

Attachment: #5. Dry Creek Water Reclamation Facility

G. Vector attraction reduction requirements are met through anaerobic digestion when there is thirty eight percent or more reduction in volatile solids. Volatile solids destruction is measured weight by volume average ((Vol. Solids Reduction = VS in - VS out / (VS in -((VS in * VS out)) (Use Average). The sludge is also air dried in windrows for further vector attraction reduction. The dry solids in windrows are between 65% to 80% total volatile solids reduction before land application.

RE: Flows From: Primary North and Primary South Raw sludge Average: Total solids (change % to Mg/l (10000) (NRS & SRS): Total Vol Solids (NRS & SRS): Total C-2 (wasting) cake flow gal: C-1 (digested) Solids (mg/L) cake: C-1 Vol solids cake (mg/L): C-2 solids cake (mg/L): C-2 Vol Solids cake (mg/L) Cake flow from Rotary Drum Thicker to digester.

CERTIFICATION STATEMENT

I certify under the penalty of law, that the pathogen requirements in Part I.C.2, one of the vector attraction the management reduction alternatives in Part I.C.3, practices in part I.D (if necessary) (including practices in Part I.D.13 if the table 4 annual pollutant limits are used) and the site restrictions in part I.C.2 (if necessary) have been met. This determination has been made under my direction and supervision in accordance with information used to determine that the pathogen requirements, the vector attraction reduction requirements, the management practices and the site restrictions have been met. I am aware that there are significant penalties for false certification including the possibility imprisonment.

Signature

Jim Hughes, Manager

Water Reclamation Division

Attachment: #6. Dry Creek Water Reclamation Facility

H. Best management practices are accomplished by applying biosolids at a whole sludge application rate that is less than or equal to the agronomic rate for the specific site and plant species. The Biosolids are applied so that it does not adversely affect a threatened or endangered species.

Biosolids are not dispersed on sites that are flooded or snow covered, frozen ground with a slope of three percent or more to prevent run off into wetland or surface water. A buffer zone of thirty-five feet from waterways, stock wells, and surface water is observed. Biosolids land applications are prohibited to sites where the available phosphorous content of the existing soil exceeds 400 pounds per acre.

Stored Biosolids on the plant facility remain in windrows for two years or less. The Biosolids are land applied in the winter, spring and fall of the year, weather permitting. Biosolids and soil are analytically tested before disposal. Cheyenne's sludge management practice ensures compliance with both Federal and State parameters and provides for long term Biosolids procedures with little or no detriment to the environment, while enhancing the native grass and field crop production of those participating ranchers and farmers who utilize Biosolids as a fertilizer supplement and soil conditioner.

CERTIFICATION STATEMENT

I certify under the penalty of law that the pathogen requirements in Part I.C.2, one of the vector attraction reduction alternatives in Part I.C.3, the management practices in part I.D (if necessary) (including in the practices in Part I.D.13 if the table 4 annual pollutant limits are used) and the site restrictions in Part I.C.2 (if necessary) have been met. This determination has been made under my direction and supervision in accordance with the system designed to assure that qualified personal properly gather and evaluate the information used to determine that the pathogen requirements, the management practices and the site restrictions have been met. I am aware that there are significant penalties for false certification including the possibility of imprisonment.

Signature

Jim Hughes, Manager

Water Reclamation Division Attachment: #7.

Dry Creek Water Reclamation Facility

I. Site restrictions are first achieved through the quality of sewage sludge product which has been stabilized to reduce pathogenic organisms, which has been dried to a solids concentration of sixty percentile or greater and contains no hazardous or toxic compounds or chemicals in concentrations which exceed those authorized by the USA EPA REGION VIII and WYOMING DEQ for land application in Part C.1, Specific Limitations and Self Monitoring Requirements and Chemical Pollutant Limitations.

The dry sludge that is produced is class \underline{A} and \underline{B} which are applied primarily to range land. Before applying sewage sludge on rangeland, pastureland, farm land, or fields, soil samples have been collected and have had the appropriate soil analysis conducted.

The <u>Class B</u> Sludge with respect to pathogens has been in compliance with the entire site restrictions listed in Part I.C.2. No sludge or material derived from sludge exceeds the limits in Table 3 Part I.C.1. The <u>Class A</u> pathogen reduction limits in Part I.C.2 meets the <u>first 4</u> vector attraction reduction alternatives in Part I.C.3. There are sufficient management practices used to prevent malfunctions and deterioration, operator errors and discharges which may cause or lead to the release of sludge to the environment, a threat to human health or a nuisance.

CERTIFICATION STATEMENT

I certify under the penalty of law, that the pathogen requirements in Part I.C.2, one of the vector attraction reduction alternatives in Part I.C.3, the management practices in Part I.D (if necessary) including the practice in Part I.D.13 if the table 4 annual pollutant limits are used) and the site restrictions in Part I.C.2 (if necessary) have been met. This determination has been made under my direction and supervision in accordance with the system designed to assure that qualified personnel properly gather and evaluate the information used to determine that the pathogen requirements, the vector attractions reduction the management practices requirements, and the restrictions have been met. I am aware that there are significant penalties for false certification including the possibility of imprisonment.

Signature)

Sigmature \(\)
Jim(\)Hughes, Manager



ANALYTICAL RESULTS

DRY CREEK WWTP LABORATORY

Cheyenne BOPU 8911 Campstool Road Cheyenne, Wyoming 82007 Phone: 307-635-3163 Fax: 307-635-6833

Date Sampled: 06/17/13

Date Received: 06/17/13

Sample Location: Zone D Sample Matrix: Compost

Sampled By: CB

Date Reported: 08/07/13

Date Fecal Analyzed: 06/17/13 Date Solids Analyzed: 06/20/13

Analyst(s): mw

EPA Method/Total Solids:

SM 19th Ed 2540B

EPA Method/Volatile Solids: SM 19th Ed 2540E

EPA Method/Fecal Coliform: SM 18th Ed 9221E (A-1 Media)

Row#	Total Solids %	Volatile Solids%	Fecal Coliform/ Dry Gram Sludge
1	89.1	45.1	<364 ·
2	85.1	47.7	<382
3	88.9	49.2	<366
4	82.8	48.6	<392
5	87.6	37.6	<371

All data meets QA/QC requirements; please see QA/QC files in Dry Creek Laboratory.

NA = Not Analyzed

Kent Loader, Laboratory Supervisor

8-7-13

Page 1 of 1

<u>Dry Creek WRF Laboratory</u> <u>For: Fecal, TS & VS</u>

Identification Reporting: No. WYSL - 22934

Permit No. WYG - <u>650002</u>

(Cheyenne BOPU) Dry Creek Water Reclamation Facility

Samples and Analytical

Quality Assurance/Quality Control OA/QC

Date: 6-17-13 Time: 10'140 [] AM [] PM

Analytical Sampling Records (Cheyenne BOPU) Dry Creek WRF Laboratory

[] Dates and time of samples collected
[] Sampling location documented
[] Sampling types appropriate
[] Sampling volumes recorded
[] Name of person sampling
[] Types of sampling containers
[] Methods of preservation
[] Sampling quality assurance/ quality control QA/QC available
[] Pollutant limits red flagged if over mg/kg (Table 1,2,3,4 and Section 503.13) (Class A and B Biosolids)
[] Certification statement signed with each laboratory analytical report:
1. Pathogen reduction
2. Vector attraction reduction operates at Dry Creek WRF analysis samples. Results from daily sheets and results, recorded daily.
3. Management Practices
4. Site restrictions
[] Class A sludge: average temperature, (volatile solids percent) and total solids Dry sludge) once a month. Turn rows once a month, <u>weather permitting</u> .
[] Chain of custody recorded
Date: 6-17-13 Time: 10 L10 [] AM [] PM

Analytical Records From: (Cheyenne BOPU) Dry Creek WRF To: (Cheyenne BOPU) Dry Creek WRF Laboratory

[] Date and time of samples analysis
[] Name of analyst
[] All analyses are reported on dry weight basis
[] Dry Creek WRF Laboratory 8911 Campstool Rd. Cheyenne, WY 82007 Ph: 307-635-3163 Fax: 307-635-6833
[] Analytical quality assurance/quality control (QA/QC) available
[] Analytical results available
[] Chain of custody record

Analytical Records From: (Cheyenne BOPU) Dry Creek WRF To: (Cheyenne BOPU) Dry Creek WRF Laboratory

	Date and time of sample
	Name of analyst
	Analytical methods used
[]	Analyses and calculation results properly documented or verified
[]	All analysis are reported on dry weight basis with the exception of volatile solids or total solids in percent. (1quart plastic bag 450 grams) (7 quart plastic bags 3150 grams).
0	Volatile solids and total solids samples need to be analyzed six times a year for Class B Biosolids and 12 times a year for Class A Biosolids.
[]	Analytical quality assurance/quality control (QA/QC) available
[]	Analytical results available
[]	Chain of custody record

Zone: | | Rows: | - 5 | Date: 6 - 17-12 | Time: 10', 40 | [] AM [] PM

Analytical Sample Containers From: (Cheyenne BOPU) Dry Creek WRF To: (Cheyenne BOPU) Dry Creek WRF Laboratory

Dry Sludge for fecal results in MPN, and percent solids for Class A or Class B Biosolids. 1 quart Plastic bags 450 grams: 7 Quart Plastic bags total of 3150 grams. Fecal samples and results are analyzed at the Dry Creek WRF Laboratory in with six hours of the holding time. The results of fecal samples in (MPN) and (percent solids) need to be analyzed in, *February, April, June, August, October, and December. **January, March, May, July, September and November; test for TS and VS. Class A test for Helminth ova density limits > 1 egg/4g TS; Enteric virus density limits of > 1 PFU/4g

- 1. *' **Class A sludge < 1000 MPN/gram. (Test 12 times a year for TS and VS).
- 2. * Class B sludge < 2,000,000 MPN/gram
- 3. Percent solids, 75 % or better for Class A Biosolids and Class B Biosolids.
- 4. Chain of custody record

Zone: [] Rows: 1 - 7 | Date: 6 - 17 - 12 | Time: 10', 40 | [] AM [] PM

Project Name: B16501, d5
Location: Dry Creek WRF.
Address: 8911 Camp 5 tool Rd.
City: Cheyenne State: Wy Zip Code: 82007.
City: Cheyenne State: Uy Zip Code: 82007. Samples Collected by: Chet Babell. [Date/Time: 6-17-13] joi40Am
Analytical Certification
This certification must be completed by the Analytical Laboratory performing service for the Cheyenne Board of Public Utilities and submitted with each "Analytical Report.
"I certify that these analysis and resulting report (s) were prepared under my direction and supervision in accordance with a system designed to assure that qualified personal properly analyze all samples and accurately report the results. I certify that all analysis were performed in accordance with method approved for wastewater under the latest revision to 40 CFR Part 503 Sludge Regulation. Based on my inquiry of the person or persons who manage the system, or those person directly responsible for analyzing, the wastewater samples and generating the report (s), the analysis, report, and information submitted is to the best on my knowledge and belief, true, accurate, and completed."
Name of Laboratory: Dvy Cverk wrt.
Address: 89/1 Cum p5/00/Rd.
City: Cheyenne State: WY Zip Code: 82007.
Name of Analyst: fent long.
This Certification is signed by:
Date: 10.29.17] Time: AM [] PM



Chain of Custody and Analytical Request Record
PLEASE PRINT CLEARLY, provide as much information as possible

Page	of	4
9	 	VI

Client's Name:	y Clerk L	UPF Contact Name:	Chet	Piru	bul		Sampler's	Name (if o	ther than Contact):_	
Report Required F			Number of Containers Sample Type	131	S REQUES	TED	How <u>Preserved</u>	Sample <u>Type</u>	Other <u>Information</u>	Analysis <u>Completed</u>
Biosoline 2) Rows,	1-00	A W S V B C Air Water Soils/Solids Vegetation Bioassay	May	1		HNO₃ H₂SO₄ 4°C HCL None	Grab or Composite	(pH, Field Analysis, etc.)	Yes / No (Lab use only)
SAMPLE IDEN (Name, Loca		Collection Collection Date Time		LEH.	4					
120non	Rowl	6-17 10:00 13 An					NA	(5-19)		
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Custody Record MUST be	Relinquished by:	Barker	Date/Time:	13 1411"	Received b	-	LA.			Date/Time:
Signed	Sample Disposal:	Return to client:	<i>' [</i>	Lab disp	osal:				Log#	715
	1D# (N) V4	$L = \lambda 18$	// Perm	it# [\	1 V G-	and Principles .	6500	02		

Attachment: #4. Dry Creek Water Reclamation Facility

F. Pathogen reduction is accomplished through anaerobic digestion. The primary and secondary digested sludge is treated in the absence of air for mean cell residence time and temperature between 25 and 35 days at 92 to 100 degrees Fahrenheit. Air dried sludge is obtained with a tractor aerator on paved drying beds and on site unpaved storage area in windrows that are turned approximately once a month dependant on the weather conditions.

The Biosolids production (dry weight) at the Dry Creek WRF is over 1500 metric tons a year. Therefore samples are collected six times a year (February, April, May, June, August, October, and December). The laboratories analyze the dry samples for metals, nutrients, organics pathogens, volatile solids and total solids.

CERTIFICATION STATEMENT

I certify under the penalty of law, that the pathogen requirements in Part I.C.3, the management practices in Part I.D (if necessary) (including the practice in part I.D.13 if the table 4 annual pollutant limits are used) and the site restrictions in Part I.C.2 (if necessary) have been met. This determination has been made under my direction and supervision in accordance with the system designed to assure that qualified personnel properly gather and evaluate the information used to determine that pathogen requirements, the vector attraction reduction requirements, the management practices and the site restrictions have been met. I am aware that there are significant penalties for false certification including the possibility of imprisonment.

Signature

Jim Hughes, Manager

Water Reclamation Division

Attachment: #5. Dry Creek Water Reclamation Facility

G. Vector attraction reduction requirements are met through anaerobic digestion when there is thirty eight percent or more reduction in volatile solids. Volatile solids destruction is measured weight by volume average ((Vol. Solids Reduction = VS in - VS out / (VS in -((VS in * VS out)) (Use Average). The sludge is also air dried in windrows for further vector attraction reduction. The dry solids in windrows are between 65% to 80% total volatile solids reduction before land application.

RE: Flows From: Primary North and Primary South Raw sludge Average: Total solids (change % to Mg/l (10000) (NRS & SRS): Total Vol Solids (NRS & SRS): Total C-2 (wasting) cake flow gal: C-1 (digested) Solids (mg/L) cake: C-1 Vol solids cake (mg/L): C-2 solids cake (mg/L): C-2 Vol Solids cake (mg/L) Cake flow from Rotary Drum Thicker to digester.

CERTIFICATION STATEMENT

I certify under the penalty of law, that the pathogen requirements in Part I.C.2, one of the vector attraction alternatives I.C.3, reduction in Part the management practices I.D (if necessary) (including in part practices in Part I.D.13 if the table 4 annual pollutant limits are used) and the site restrictions in part I.C.2 (if necessary) have been met. This determination has been made under my direction and supervision in accordance with information used to determine that the pathogen requirements, the vector attraction reduction requirements, the management practices and the site restrictions have been met. I am aware that there are significant penalties for false including certification the possibility imprisonment.

Signature

Jim Hughes, Manager

Water Reclamation Division

H. Best management practices are accomplished by applying biosolids at a whole sludge application rate that is less than or equal to the agronomic rate for the specific site and plant species. The Biosolids are applied so that it does not adversely affect a threatened or endangered species.

Biosolids are not dispersed on sites that are flooded or snow covered, frozen ground with a slope of three percent or more to prevent run off into wetland or surface water. A buffer zone of thirty-five feet from waterways, stock wells, and surface water is observed. Biosolids land applications are prohibited to sites where the available phosphorous content of the existing soil exceeds 400 pounds per acre.

Stored Biosolids on the plant facility remain in windrows for two years or less. The Biosolids are land applied in the winter, spring and fall of the year, weather permitting. Biosolids and soil are analytically tested before disposal. Cheyenne's sludge management practice ensures compliance with both Federal and State parameters and provides for long term Biosolids procedures with little or no detriment to the environment, while enhancing the native grass and field crop production of those participating ranchers and farmers who utilize Biosolids as a fertilizer supplement and soil conditioner.

CERTIFICATION STATEMENT

I certify under the penalty of law that the pathogen requirements in Part I.C.2, one of the vector attraction reduction alternatives in Part I.C.3, the management practices in part I.D (if necessary) (including in the practices in Part I.D.13 if the table 4 annual pollutant limits are used) and the site restrictions in Part I.C.2 (if necessary) have been met. This determination has been made under my direction and supervision in accordance with the system designed to assure that qualified personal properly gather and evaluate the information used to determine that the pathogen requirements, the management practices and the site restrictions have been met. I am aware that there are significant penalties for false certification including the possibility of imprisonment.

Signature

Jim Hughes, Manager

Water Reclamation Division

Attachment: #7.

Dry Creek Water Reclamation Facility

I. Site restrictions are first achieved through the quality of sewage sludge product which has been stabilized to reduce pathogenic organisms, which has been dried to a solids concentration of sixty percentile or greater and contains no hazardous or toxic compounds or chemicals in concentrations which exceed those authorized by the USA EPA REGION VIII and WYOMING DEQ for land application in Part C.1, Specific Limitations and Self Monitoring Requirements and Chemical Pollutant Limitations.

The dry sludge that is produced is class \underline{A} and \underline{B} which are applied primarily to range land. Before applying sewage sludge on rangeland, pastureland, farm land, or fields, soil samples have been collected and have had the appropriate soil analysis conducted.

The <u>Class B</u> Sludge with respect to pathogens has been in compliance with the entire site restrictions listed in Part I.C.2. No sludge or material derived from sludge exceeds the limits in Table 3 Part I.C.1. The <u>Class A</u> pathogen reduction limits in Part I.C.2 meets the first 4 vector attraction reduction alternatives in Part I.C.3. There are sufficient management practices used to prevent malfunctions and deterioration, operator errors and discharges which may cause or lead to the release of sludge to the environment, a threat to human health or a nuisance.

CERTIFICATION STATEMENT

I certify under the penalty of law, that the pathogen requirements in Part I.C.2, one of the vector attraction reduction alternatives in Part I.C.3, the management practices in Part I.D (if necessary) including the practice in Part I.D.13 if the table 4 annual pollutant limits are used) and the site restrictions in Part I.C.2 (if necessary) have been met. This determination has been made under my direction and supervision in accordance with the system designed to assure that qualified personnel properly gather and evaluate the information used to determine that the pathogen requirements, the vector attractions reduction requirements, the management practices and the restrictions have been met. I am aware that there are significant penalties for false certification including the possibility of imprisonment.

Signature /

Jim Hughes, Manager



ANALYTICAL RESULTS

DRY CREEK WWTP LABORATORY

Cheyenne BOPU 8911 Campstool Road Cheyenne, Wyoming 82007 Phone: 307-635-3163 Fax: 307-635-6833

Date Sampled: 06/17/13

Date Received: 06/17/13

Sample Location: Zone C

Sample Matrix: Compost

Sampled By: CB

Date Reported: 08/07/13

Date Fecal Analyzed: 6/17/13

Date Solids Analyzed: 06/20/13

Analyst(s): mw

EPA Method/Total Solids:

SM 19th Ed 2540B

EPA Method/Volatile Solids: SM 19th Ed 2540E

EPA Method/Fecal Coliform: SM 18th Ed 9221E (A-1 Media)

Row #	Total Solids %	Volatile Solids%	Fecal Coliform/ Dry Gram Sludge
1	66.7	42.0	<487 .
2	83.4	40.4	<393
3	87.3	36.7	<372
4	87.4	43.2	742
5	88.7	41.1	<366
6	86.5	51.5	<376
7	86.4	52.6	376

Comments:

All data meets QA/QC requirements; please see QA/QC files in Dry Creek Laboratory. NA = Not Analyzed

Loader, Laboratory Supervisor

Dry Creek WRF Laboratory For: Fecal, TS & VS

Identification Reporting: No. WYSL - 22934

Permit No. WYG - <u>650002</u>

(Cheyenne BOPU) Dry Creek Water Reclamation Facility

Samples and Analytical

Quality Assurance/Quality Control OA/QC

Date: 6-17-13 | Time: 10140 | [] AM [] PM

<u>Analytical Sampling Records</u> (Cheyenne BOPU) Dry Creek WRF Laboratory

[] Dates and time of samples collected
[] Sampling location documented
[] Sampling types appropriate
[] Sampling volumes recorded
[] Name of person sampling
[] Types of sampling containers
[] Methods of preservation
[] Sampling quality assurance/ quality control QA/QC available
[] Pollutant limits red flagged if over mg/kg (Table 1,2,3,4 and Section 503.13) (Class A and B Biosolids)
[] Certification statement signed with each laboratory analytical report:
1. Pathogen reduction
2. Vector attraction reduction operates at Dry Creek WRF analysis samples. Results from daily sheets and results, recorded daily.
3. Management Practices
4. Site restrictions
[] Class A sludge: average temperature, (volatile solids percent) and total solids Dry sludge) once a month. Turn rows once a month, <u>weather permitting</u> .
[] Chain of custody recorded
Date: 6-17-13 Time: 10; 40 [] AM [] PM

Analytical Records From: (Cheyenne BOPU) Dry Creek WRF To: (Cheyenne BOPU) Dry Creek WRF Laboratory

[] Date and time of samples analysis
[] Name of analyst
[] All analyses are reported on dry weight basis
[] Dry Creek WRF Laboratory 8911 Campstool Rd. Cheyenne, WY 82007 Ph: 307-635-3163 Fax: 307-635-6833
[] Analytical quality assurance/quality control (QA/QC) available
[] Analytical results available
[] Chain of custody record

Date: 6-17- 13 | Time: 10,40 | [] (M) [] PM

Analytical Records From: (Cheyenne BOPU) Dry Creek WRF To: (Cheyenne BOPU) Dry Creek WRF Laboratory

[] Date and time of sample
[] Name of analyst
[] Analytical methods used
[] Analyses and calculation results properly documented or verified
[] All analysis are reported on dry weight basis with the exception of volatile solids or total solids in percent. (1quart plastic bag 450 grams) (7 quart plastic bags 3150 grams).
[] Volatile solids and total solids samples need to be analyzed six times a year for Class B Biosolids and 12 times a year for Class A Biosolids.
[] Analytical quality assurance/quality control (QA/QC) available
[] Analytical results available
[] Chain of custody record

Zone: C | Rows: 1 - 7 | Date: 6 - 17 - 13 | Time: 10 | 40 | [] AM | PM

Analytical Sample Containers From: (Cheyenne BOPU) Dry Creek WRF To: (Cheyenne BOPU) Dry Creek WRF Laboratory

Dry Sludge for fecal results in MPN, and percent solids for Class A or Class B Biosolids. 1 quart Plastic bags 450 grams: 7 Quart Plastic bags total of 3150 grams. Fecal samples and results are analyzed at the Dry Creek WRF Laboratory in with six hours of the holding time. The results of fecal samples in (MPN) and (percent solids) need to be analyzed in, *February, April, June, August, October, and December. **January, March, May, July, September and November; test for TS and VS. Class A test for Helminth ova density limits > 1 egg/4g TS; Enteric virus density limits of > 1 PFU/4g

- 1. *' **Class A sludge < 1000 MPN/gram. (Test 12 times a year for TS and VS).
- 2. * Class B sludge < 2,000,000 MPN/gram
- 3. Percent solids, 75 % or better for Class A Biosolids and Class B Biosolids.
- 4. Chain of custody record

Zone: [] Rows: 1 -] Date: 6 - 17-12 Time: 10 140 [] AM [] PM

Project Name: B 1050 1.15
Location: Dry Cropk WRF
Address: 8911 Camps Toul Rd.
City: Cheyenne State: Ly Zip Code: 82007. Samples Collected by: Chet Barbell. [Date/Time: 6-17-13/10;40Am
Analytical Certification
This certification must be completed by the Analytical Laboratory performing service for the Cheyenne Board of Public Utilities and submitted with each "Analytical Report.
"I certify that these analysis and resulting report (s) were prepared under my direction and supervision in accordance with a system designed to assure that qualified personal properly analyze all samples and accurately report the results. I certify that all analysis were performed in accordance with method approved for wastewater under the latest revision to 40 CFR Part 503 Sludge Regulation. Based on my inquiry of the person or persons who manage the system, or those person directly responsible for analyzing, the wastewater samples and generating the report (s), the analysis, report, and information submitted is to the best on my knowledge and belief, true, accurate, and completed."
Name of Laboratory: Dry Creek wikk.
Address: 8911 Campstoul Rd.
City: Cheyenne State: Wy Zip Code: 82007.
Name of Analyst: Lent
This Certification is signed by:
Date: 10.29.13 Time: AM [] PM



Chain of Custody and Analytical Request Record
PLEASE PRINT CLEARLY, provide as much information as possible

	1		/
Page		of	

Client's Name: Dry Cverk WK	Contact Name:_			f other than Contact):
Report Required For:		Number of ANALYSIS	REQUESTED How Sample	
		Containers	Preserved Type	Information Completed
Biosolds por 1-7	!	Sample Type		
2000 C ROWS -1		AWSVBO	HNO ₃ Grab	(pH, Field Analysis, Yes / No
Marketing (1)) . Can describe the control of the c		Air Water	H ₂ SO ₄ or	etc.) (Lab use only)
		Soils/Solids	4°C Compos	ite
		<u>V</u> egetation <u>B</u> ioassay	HCL None	
SAMPLE IDENTIFICATION	Collection Collection	Other	None	
(Name, Location, etc.)	Date Time	MATRIX W	1 1 1 1 1	
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4				
5				
6				
7 1 1 1	1 1.	1, 11/1,		
Custody Relinquished by:	et Barrel	Date/Time:	Received by:	Date/Time;
Record	a Barrens	16-17-19	[111 / 1 / A	6/17/17
MUST be		10: 00 AM	Mdelilo	1130
Signed Signed				1
Sample Disposal:	Return to client:	Lab dispo	sal:	Log# 714

Copies to:

White - Book in Laboratory

Yellow - Laboratory Hard Copy

Pink - Client

Attachment: #4. Dry Creek Water Reclamation Facility

F. Pathogen reduction is accomplished through anaerobic digestion. The primary and secondary digested sludge is treated in the absence of air for mean cell residence time and temperature between 25 and 35 days at 92 to 100 degrees Fahrenheit. Air dried sludge is obtained with a tractor aerator on paved drying beds and on site unpaved storage area in windrows that are turned approximately once a month dependant on the weather conditions.

The Biosolids production (dry weight) at the Dry Creek WRF is over 1500 metric tons a year. Therefore samples are collected six times a year (February, April, May, June, August, October, and December). The laboratories analyze the dry samples for metals, nutrients, organics pathogens, volatile solids and total solids.

CERTIFICATION STATEMENT

I certify under the penalty of law, that the pathogen requirements in Part I.C.3, the management practices in Part I.D (if necessary) (including the practice in part I. D.13 if the table 4 annual pollutant limits are used) and the site restrictions in Part I.C.2 (if necessary) have been met. This determination has been made under my direction and supervision in accordance with the system designed to assure that qualified personnel properly gather and evaluate the information used to determine that pathogen requirements, the vector attraction reduction requirements, the management practices and the site restrictions have been met. I am aware that there are significant penalties false certification including the possibility of imprisonment.

Signature

Jim Hughes, Manager

Water Reclamation Division

Attachment: #5. Dry Creek Water Reclamation Facility

G. Vector attraction reduction requirements are met through anaerobic digestion when there is thirty eight percent or more reduction in volatile solids. Volatile solids destruction is measured weight by volume average ((Vol. Solids Reduction = VS in - VS out / (VS in - ((VS in * VS out)) (Use Average). The sludge is also air dried in windrows for further vector attraction reduction. The dry solids in windrows are between 65% to 80% total volatile solids reduction before land application.

RE: Flows From: Primary North and Primary South Raw sludge Average: Total solids (change % to Mg/l (10000) (NRS & SRS): Total Vol Solids (NRS & SRS): Total C-2 (wasting) cake flow gal: C-1 (digested) Solids (mg/L) cake: C-1 Vol solids cake (mg/L): C-2 solids cake (mg/L): C-2 Vol Solids cake (mg/L) Cake flow from Rotary Drum Thicker to digester.

CERTIFICATION STATEMENT

I certify under the penalty of law, that the pathogen requirements in Part I.C.2, one of the vector attraction reduction alternatives in Part I.C.3, the management practices in part I.D (if necessary) (including practices in Part I.D.13 if the table 4 annual pollutant limits are used) and the site restrictions in part I.C.2 (if necessary) have been met. This determination has been made under my direction and supervision in accordance with information used to determine that the pathogen requirements, the vector attraction reduction requirements, the management practices and the site restrictions have been met. I am aware that there are significant penalties for false certification including the possibility imprisonment.

Signature

Jim Hughes, Manager

Water Reclamation Division

Attachment: #6. Dry Creek Water Reclamation Facility

H. Best management practices are accomplished by applying biosolids at a whole sludge application rate that is less than or equal to the agronomic rate for the specific site and plant species. The Biosolids are applied so that it does not adversely affect a threatened or endangered species.

Biosolids are not dispersed on sites that are flooded or snow covered, frozen ground with a slope of three percent or more to prevent run off into wetland or surface water. A buffer zone of thirty-five feet from waterways, stock wells, and surface water is observed. Biosolids land applications are prohibited to sites where the available phosphorous content of the existing soil exceeds 400 pounds per acre.

Stored Biosolids on the plant facility remain in windrows for two years or less. The Biosolids are land applied in the winter, spring and fall of the year, weather permitting. Biosolids and soil are analytically tested before disposal. Cheyenne's sludge management practice ensures compliance with both Federal and State parameters and provides for long term Biosolids procedures with little or no detriment to the environment, while enhancing the native grass and field crop production of those participating ranchers and farmers who utilize Biosolids as a fertilizer supplement and soil conditioner.

CERTIFICATION STATEMENT

I certify under the penalty of law that the pathogen requirements in Part I.C.2, one of the vector attraction reduction alternatives in Part I.C.3, the management practices in part I.D (if necessary) (including in the practices in Part I.D.13 if the table 4 annual pollutant limits are used) and the site restrictions in Part I.C.2 (if necessary) have been met. This determination has been made under my direction and supervision in accordance with the system designed to assure that qualified personal properly gather and evaluate the information used to determine that the pathogen requirements, the management practices and the site restrictions have been met. I am aware that there are significant penalties for false certification including the possibility of imprisonment.

Signature

Jim Hughes, Manager

Water Reclamation Division Attachment: #7.

Dry Creek Water Reclamation Facility

I. Site restrictions are first achieved through the quality of sewage sludge product which has been stabilized to reduce pathogenic organisms, which has been dried to a solids concentration of sixty percentile or greater and contains no hazardous or toxic compounds or chemicals in concentrations which exceed those authorized by the USA EPA REGION VIII and WYOMING DEQ for land application in Part C.1, Specific Limitations and Self Monitoring Requirements and Chemical Pollutant Limitations.

The dry sludge that is produced is class \underline{A} and \underline{B} which are applied primarily to range land. Before applying sewage sludge on rangeland, pastureland, farm land, or fields, soil samples have been collected and have had the appropriate soil analysis conducted.

The <u>Class B</u> Sludge with respect to pathogens has been in compliance with the entire site restrictions listed in Part I.C.2. No sludge or material derived from sludge exceeds the limits in Table 3 Part I.C.1. The <u>Class A</u> pathogen reduction limits in Part I.C.2 meets the first 4 vector attraction reduction alternatives in Part I.C.3. There are sufficient management practices used to prevent malfunctions and deterioration, operator errors and discharges which may cause or lead to the release of sludge to the environment, a threat to human health or a nuisance.

CERTIFICATION STATEMENT

I certify under the penalty of law, that the pathogen requirements in Part I.C.2, one of the vector attraction reduction alternatives in Part I.C.3, the management practices in Part I.D (if necessary) including the practice in Part I.D.13 if the table 4 annual pollutant limits are used) and the site restrictions in Part I.C.2 (if necessary) have been met. This determination has been made under my direction and supervision in accordance with the system designed to assure that qualified personnel properly gather and evaluate the information used to determine that the pathogen requirements, the vector attractions reduction requirements, the management practices and the restrictions have been met. I am aware that there are significant penalties for false certification including the possibility of imprisonment.

Signature J Jim Hughes, Manager



ANALYTICAL RESULTS

DRY CREEK WWTP LABORATORY

Cheyenne BOPU 8911 Campstool Road Cheyenne, Wyoming 82007 Phone: 307-635-3163 Fax: 307-635-6833

Date Sampled: 04/22/13

Date Received: 04/22/13

Sample Location: Zone E

Sample Matrix: Compost

Sampled By: CB

Date Reported: 05/08/13

Date Fecal Analyzed: 4/22/13 Date Solids Analyzed: 04/22/13

Analyst(s): mw

EPA Method/Total Solids:

SM 19th Ed 2540B

EPA Method/Volatile Solids: SM 19th Ed 2540E

EPA Method/Fecal Coliform: SM 18th Ed 9221E (A-1 Media)

Row#	Total Solids %	Volatile Solids%	Fecal Coliform/ Dry Gram Sludge
1	85.3	39.4	<381
2	81.8	42.8	<397
3	83.1	47.7	<391
4	85.9	35.1	<378
5	88.7	32.4	366
6	83.8	43.3	<388
7	86.0	46.7	<378
8	88.8	37.8	<366
9	85.4	49.6	<380

Comments:

All data meets QA/QC requirements; please see QA/QC files in Dry Creek Laboratory. NA = Not Ahalyzed

Kent Loader, Laboratory Supervisor

<u>Dry Creek WRF Laboratory</u> <u>For: Fecal, TS & VS</u>

Identification Reporting: No. WYSL - 22934

Permit No. WYG - 650002

(Chevenne BOPU) Dry Creek Water Reclamation Facility

Samples and Analytical

Quality Assurance/Quality Control OA/QC

Date: 1, -22 - 13 | Time: 10/00 | [] AM [] PM

Analytical Sampling Records (Cheyenne BOPU) Dry Creek WRF Laboratory

; ···..

[] Dates and time of samples collected
[] Sampling location documented
[] Sampling types appropriate
[] Sampling volumes recorded
[] Name of person sampling
[] Types of sampling containers
[] Methods of preservation
[] Sampling quality assurance/ quality control QA/QC available
[] Pollutant limits red flagged if over mg/kg (Table 1,2,3,4 and Section 503.13) (Class A and B Biosolids)
[] Certification statement signed with each laboratory analytical report:
1. Pathogen reduction
2. Vector attraction reduction operates at Dry Creek WRF analysis samples. Results from daily sheets and results, recorded daily.
3. Management Practices
4. Site restrictions
[] Class A sludge: average temperature, (volatile solids percent) and total solids Dry sludge) once a month. Turn rows once a month, <u>weather permitting</u> .
[] Chain of custody recorded
Date: 4-22-13] Time: 10:00] [] AM [] PM

Analytical Records From: (Cheyenne BOPU) Dry Creek WRF To: (Cheyenne BOPU) Dry Creek WRF Laboratory

Date and time of samples analysis	
Name of analyst	
All analyses are reported on dry weight basis	
Dry Creek WRF Laboratory 8911 Campstool Rd. Cheyenne, WY 82007 Ph: 307-635-3163 Fax: 307-635-6833	
Analytical quality assurance/quality control (QA/QC) available	
Analytical results available	
Chain of custody record	

Date: 4-22-13 | Time: 10:00 | [] AM [] PM

Analytical Records From: (Cheyenne BOPU) Dry Creek WRF To: (Cheyenne BOPU) Dry Creek WRF Laboratory

[] Date and time of sample
[] Name of analyst
[] Analytical methods used
[] Analyses and calculation results properly documented or verified
[] All analysis are reported on dry weight basis with the exception of volatile solid or total solids in percent. (1quart plastic bag 450 grams) (7 quart plastic bags 3150 grams).
[] Volatile solids and total solids samples need to be analyzed six times a year for Class B Biosolids and 12 times a year for Class A Biosolids.
[] Analytical quality assurance/quality control (QA/QC) available
[] Analytical results available
[] Chain of custody record

Zone: \boxed{F} Rows: $\boxed{-9}$ Date: $\boxed{4-22-13}$ Time: $\boxed{10',00}$ [] \boxed{AM} [] PM

Analytical Sample Containers From: (Cheyenne BOPU) Dry Creek WRF To: (Cheyenne BOPU) Dry Creek WRF Laboratory

Dry Sludge for fecal results in MPN, and percent solids for Class A or Class B Biosolids. 1 quart Plastic bags 450 grams: 7 Quart Plastic bags total of 3150 grams. Fecal samples and results are analyzed at the Dry Creek WRF Laboratory in with six hours of the holding time. The results of fecal samples in (MPN) and (percent solids) need to be analyzed in, *February, April, June, August, October, and December. **January, March, May, July, September and November; test for TS and VS. Class A test for Helminth ova density limits > 1 egg/4g TS; Enteric virus density limits of > 1 PFU/4g

- 1. *' **Class A sludge < 1000 MPN/gram. (Test 12 times a year for TS and VS).
- 2. * Class B sludge < 2,000,000 MPN/gram
- 3. Percent solids, 75 % or better for Class A Biosolids and Class B Biosolids.
- 4. Chain of custody record

	CB	
	4-22-13	a 7
Zone: <u>F</u> Rows: <u> </u>] Date: 10,00 Time: 10,00] [] AM [] PM

Project Name: 16 1050 1115
Location: Dry Creek URF.
Address: 89/1 Canp 5/00/Rd.
City: Cheyenne State: Wy Zip Code: 8207.
Samples Collected by: Chet Benkell. [Date/Time: 4-22-13 /10/10.]
Analytical Certification
This certification must be completed by the Analytical Laboratory performing service for the Cheyenne Board of Public Utilities and submitted with each "Analytical Report.
"I certify that these analysis and resulting report (s) were prepared under my direction and supervision in accordance with a system designed to assure that qualified personal properly analyze all samples and accurately report the results. I certify that all analysis were performed in accordance with method approved for wastewater under the latest revision to 40 CFR Part 503 Sludge Regulation. Based on my inquiry of the person or persons who manage the system, or those person directly responsible for analyzing, the wastewater samples and generating the report (s), the analysis, report, and information submitted is to the best on my knowledge and belief, true, accurate, and completed."
Name of Laboratory: Dry Creek INRF.
Address: 89/1 Campstool Rd.
City: Che yenne State: Wy Zip Code: 82007.
Name of Analyst:
This Certification is signed by:
Date: 6-28-13 Time: 0800 JAM [] PM



Chain of Custody and Analytical Request Record
PLEASE PRINT CLEARLY, provide as much information as possible

	
Page/_	_ oi/\
<u> </u>	

Client's Name: Dry Creak MIRE C	ontact Name:	ot Bock	Sampler's Name	(if other than Contact):_	
Report Required For:	Numbe		1 1 1 1 1	4	Analysis
	Contair	1	Preserved Typ	e <u>Information</u>	Completed
Zone E Rows 1-7	Sample A W S V				
13,000 1,15	Air <u>W</u> a		HNO₃ Gra		Yes / No
77. 476 1167	Soils/So		H ₂ SO ₄ or 4°C Compo	,	(Lab use only)
	⊻egeta		HCL .)
SAMPLE IDENTIFICATION Collecti	Dioass On Collection Other	ssay 3 M M	None		
(Name, Location, etc.)	on Collection Qthe				
120hr E Kowl 4-23		Tre de la constante de la cons	MA Gra	h	
		37,1823			
2					
3					
4					
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6 ()			 		
7 1 1 1					
Custody Relinquished by:	Date/Tir	72-12	eceived by:		Date/Time:
Record All Production	,	00 A 111	11) okch/-/		1000
Signed	ırn to client:	Lab disposal		Log#	594

Copies to:

White - Book in Laboratory

Yellow - Laboratory Hard Copy

Pink - Client



Chain of Custody and Analytical Request Record PLEASE PRINT CLEARLY, provide as much information as possible



Client's Name: <u></u>	Cleek W	RF Cont	act Name:_	Alt	-) Jai				-	s Name (if c	other than Contact):_	
	E Rows	8-9	1	Number of Containers Sample Type	any	LYSI	S RE	QUE	STE	D How Preserve	Sample Type	Other <u>Information</u>	Analysis <u>Completed</u>
15:05c) iJ5			A W S V B O Air <u>W</u> ater Soils/Solids Yegetation Bioassay	CO / W					HNO ₃ H ₂ SO ₄ 4°C HCL None	Grab or Composite	(pH, Field Analysis, etc.)	Yes / No (Lab use only)
SAMPLE IDEN (Name, Loca		Collection Date	Collection Time	<u>Q</u> ther MATRIX	3	77	>			1	4		
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Signed	Sample Disposal:	Return to	client:		La	b dispo	sal:_					Log#	695

Copies to:

White - Book in Laboratory

Yellow - Laboratory Hard Copy

Pink - Client

Attachment: #4. Dry Creek Water Reclamation Facility

F. Pathogen reduction is accomplished through anaerobic digestion. The primary and secondary digested sludge is treated in the absence of air for mean cell residence time and temperature between 25 and 35 days at 92 to 100 degrees Fahrenheit. Air dried sludge is obtained with a tractor aerator on paved drying beds and on site unpaved storage area in windrows that are turned approximately once a month dependant on the weather conditions.

The Biosolids production (dry weight) at the Dry Creek WRF is over 1500 metric tons a year. Therefore samples are collected six times a year (February, April, May, June, August, October, and December). The laboratories analyze the dry samples for metals, nutrients, organics pathogens, volatile solids and total solids.

CERTIFICATION STATEMENT

I certify under the penalty of law, that the pathogen requirements in Part I.C.3, the management practices in Part I.D (if necessary) (including the practice in part I.D.13 if the table 4 annual pollutant limits are used) and the site restrictions in Part I.C.2 (if necessary) have been met. This determination has been made under my direction and supervision in accordance with the system designed to assure that qualified personnel properly gather and evaluate the information used to determine that pathogen requirements, the vector attraction reduction requirements, the management practices and the site restrictions have been met. I am aware that there are significant penalties for false certification including the possibility of imprisonment.

Signature

Jim Hughes, Manager

Water Reclamation Division

Attachment: #5. Dry Creek Water Reclamation Facility

G. Vector attraction reduction requirements are met through anaerobic digestion when there is thirty eight percent or more reduction in volatile solids. Volatile solids destruction is measured weight by volume average ((Vol. Solids Reduction = VS in - VS out / (VS in -((VS in * VS out)) (Use Average). The sludge is also air dried in windrows for further vector attraction reduction. The dry solids in windrows are between 65% to 80% total volatile solids reduction before land application.

RE: Flows From: Primary North and Primary South Raw sludge Average: Total solids (change % to Mg/l (10000) (NRS & SRS): Total Vol Solids (NRS & SRS): Total C-2 (wasting) cake flow gal: C-1 (digested) Solids (mg/L) cake: C-1 Vol solids cake (mg/L): C-2 solids cake (mg/L): C-2 Vol Solids cake (mg/L) Cake flow from Rotary Drum Thicker to digester.

CERTIFICATION STATEMENT

I certify under the penalty of law, that the pathogen requirements in Part I.C.2, one of the vector attraction alternatives in Part I.C.3, the management practices in part I.D (if necessary) (including practices in Part I.D.13 if the table 4 annual pollutant limits are used) and the site restrictions in part I.C.2 (if necessary) have been met. This determination has been made under my direction and supervision in accordance with information used to determine that the pathogen requirements, the vector attraction reduction requirements, the management practices and the site restrictions have been met. I am aware that there are significant penalties for certification including the possibility imprisonment.

Signature

Jim Hughes, Manager

Water Reclamation Division

H. Best management practices are accomplished by applying biosolids at a whole sludge application rate that is less than or equal to the agronomic rate for the specific site and plant species. The Biosolids are applied so that it does not adversely affect a threatened or endangered species.

Biosolids are not dispersed on sites that are flooded or snow covered, frozen ground with a slope of three percent or more to prevent run off into wetland or surface water. A buffer zone of thirty-five feet from waterways, stock wells, and surface water is observed. Biosolids land applications are prohibited to sites where the available phosphorous content of the existing soil exceeds 400 pounds per acre.

Stored Biosolids on the plant facility remain in windrows for two years or less. The Biosolids are land applied in the winter, spring and fall of the year, weather permitting. Biosolids and soil are analytically tested before disposal. Cheyenne's sludge management practice ensures compliance with both Federal and State parameters and provides for long term Biosolids procedures with little or no detriment to the environment, while enhancing the native grass and field crop production of those participating ranchers and farmers who utilize Biosolids as a fertilizer supplement and soil conditioner.

CERTIFICATION STATEMENT

I certify under the penalty of law that the pathogen requirements in Part I.C.2, one of the vector attraction reduction alternatives in Part I.C.3, the management practices in part I.D (if necessary) (including in the practices in Part I.D.13 if the table 4 annual pollutant limits are used) and the site restrictions in Part I.C.2 (if necessary) have been met. This determination has been made under my direction and supervision in accordance with the system designed to assure that qualified personal properly gather and evaluate the information used to determine that the pathogen requirements, the management practices and the site restrictions have been met. I am aware that there are significant penalties for false certification including the possibility of imprisonment.

Signature

Jim Hughes, Manager

Water Reclamation Division

Attachment: #7.

Dry Creek Water Reclamation Facility

I. Site restrictions are first achieved through the quality of sewage sludge product which has been stabilized to reduce pathogenic organisms, which has been dried to a solids concentration of sixty percentile or greater and contains no hazardous or toxic compounds or chemicals in concentrations which exceed those authorized by the USA EPA REGION VIII and WYOMING DEQ for land application in Part C.1, Specific Limitations and Self Monitoring Requirements and Chemical Pollutant Limitations.

The dry sludge that is produced is class \underline{A} and \underline{B} which are applied primarily to range land. Before applying sewage sludge on rangeland, pastureland, farm land, or fields, soil samples have been collected and have had the appropriate soil analysis conducted.

The <u>Class B</u> Sludge with respect to pathogens has been in compliance with the entire site restrictions listed in Part I.C.2. No sludge or material derived from sludge exceeds the limits in Table 3 Part I.C.1. The <u>Class A</u> pathogen reduction limits in Part I.C.2 meets the first 4 vector attraction reduction alternatives in Part I.C.3. There are sufficient management practices used to prevent malfunctions and deterioration, operator errors and discharges which may cause or lead to the release of sludge to the environment, a threat to human health or a nuisance.

CERTIFICATION STATEMENT

I certify under the penalty of law, that the pathogen requirements in Part I.C.2, one of the vector attraction reduction alternatives in Part I.C.3, the management practices in Part I.D (if necessary) including the practice in Part I.D.13 if the table 4 annual pollutant limits are used) and the site restrictions in Part I.C.2 (if necessary) have been met. This determination has been made under my direction and supervision in accordance with the system designed to assure that qualified personnel properly gather and evaluate the information used to determine that the pathogen requirements, the vector attractions reduction requirements, the management practices and the restrictions have been met. I am aware that there are significant penalties for false certification including the possibility of imprisonment.

Signature |

Jim Hughes, Manager



ANALYTICAL RESULTS

DRY CREEK WWTP LABORATORY

Cheyenne BOPU 8911 Campstool Road Cheyenne, Wyoming 82007 Phone: 307-635-3163 Fax: 307-635-6833

Date Sampled: 04/22/13

Date Received: 04/22/13

Sample Location: Zone D Sample Matrix: Compost

Sampled By: CB

Date Reported: 05/08/13

Date Fecal Analyzed: 4/22/13 Date Solids Analyzed: 04/22/13

Analyst(s): mw

EPA Method/Total Solids:

SM 19th Ed 2540B

EPA Method/Volatile Solids: SM 19th Ed 2540E

EPA Method/Fecal Coliform: SM 18th Ed 9221E (A-1 Media)

Row #	Total Solids %	Volatile Solids%	Dry Gram Sludge
1	86.1	27.4	<377
2	74.7	39.8	<434
3	85.3	44.3	<381
4	86.9	42.7	<374
5	85.9	39.0	<378

Comments:

All data meets QA/QC requirements; please see QA/QC files in Dry Creek Laboratory. NA = Not Analyzed

Kent/Loader, Laboratory Supervisor

Page 1 of 1

Dry Creek WRF Laboratory For: Fecal, TS & VS

Identification Reporting: No. WYSL - 22934

Permit No. WYG - <u>650002</u>

(Cheyenne BOPU) Dry Creek Water Reclamation Facility

Samples and Analytical

Quality Assurance/Quality Control OA/QC

Date: 4-22-13 | Time: 10100 | [] AM [] PM

Analytical Sampling Records (Cheyenne BOPU) Dry Creek WRF Laboratory

[] Dates and time of samples collected
[] Sampling location documented
[] Sampling types appropriate
[] Sampling volumes recorded
[] Name of person sampling
[] Types of sampling containers
[] Methods of preservation
[] Sampling quality assurance/ quality control QA/QC available
[] Pollutant limits red flagged if over mg/kg (Table 1,2,3,4 and Section 503.13) (Class A and B Biosolids)
[] Certification statement signed with each laboratory analytical report:
1. Pathogen reduction
2. Vector attraction reduction operates at Dry Creek WRF analysis samples. Results from daily sheets and results, recorded daily.
3. Management Practices
4. Site restrictions
[] Class A sludge: average temperature, (volatile solids percent) and total solids Dry sludge) once a month. Turn rows once a month, <u>weather permitting</u> .
[] Chain of custody recorded
Date: $4-22-13$ Time: 16.00 [] AM PM

Analytical Records From: (Cheyenne BOPU) Dry Creek WRF To: (Cheyenne BOPU) Dry Creek WRF Laboratory

[] Date and time of samples analysis
[] Name of analyst
[] All analyses are reported on dry weight basis
[] Dry Creek WRF Laboratory 8911 Campstool Rd. Cheyenne, WY 82007 Ph: 307-635-3163 Fax: 307-635-6833
[] Analytical quality assurance/quality control (QA/QC) available
[] Analytical results available
[] Chain of custody record

Analytical Records From: (Cheyenne BOPU) Dry Creek WRF To: (Cheyenne BOPU) Dry Creek WRF Laboratory

[] Date and time of sample [] Name of analyst [] Analytical methods used [] Analyses and calculation results properly documented or verified [] All analysis are reported on dry weight basis with the exception of volatile solid or total solids in percent. (1quart plastic bag 450 grams) (7 quart plastic bags 3150 grams). [] Volatile solids and total solids samples need to be analyzed six times a year for Class B Biosolids and 12 times a year for Class A Biosolids. [] Analytical quality assurance/quality control (QA/QC) available [] Analytical results available [] Chain of custody record	
 [] Analytical methods used [] Analyses and calculation results properly documented or verified [] All analysis are reported on dry weight basis with the exception of volatile solid or total solids in percent. (1quart plastic bag 450 grams) (7 quart plastic bags 3150 grams). [] Volatile solids and total solids samples need to be analyzed six times a year for Class B Biosolids and 12 times a year for Class A Biosolids. [] Analytical quality assurance/quality control (QA/QC) available [] Analytical results available 	[] Date and time of sample
 [] Analyses and calculation results properly documented or verified [] All analysis are reported on dry weight basis with the exception of volatile solid or total solids in percent. (1quart plastic bag 450 grams) (7 quart plastic bags 3150 grams). [] Volatile solids and total solids samples need to be analyzed six times a year for Class B Biosolids and 12 times a year for Class A Biosolids. [] Analytical quality assurance/quality control (QA/QC) available [] Analytical results available 	[] Name of analyst
 [] All analysis are reported on dry weight basis with the exception of volatile solid or total solids in percent. (1quart plastic bag 450 grams) (7 quart plastic bags 3150 grams). [] Volatile solids and total solids samples need to be analyzed six times a year for Class B Biosolids and 12 times a year for Class A Biosolids. [] Analytical quality assurance/quality control (QA/QC) available [] Analytical results available 	[] Analytical methods used
or total solids in percent. (1quart plastic bag 450 grams) (7 quart plastic bags 3150 grams). [] Volatile solids and total solids samples need to be analyzed six times a year for Class B Biosolids and 12 times a year for Class A Biosolids. [] Analytical quality assurance/quality control (QA/QC) available [] Analytical results available	[] Analyses and calculation results properly documented or verified
Class B Biosolids and 12 times a year for Class A Biosolids. [] Analytical quality assurance/quality control (QA/QC) available [] Analytical results available	or total solids in percent. (1quart plastic bag 450 grams) (7 quart plastic bags
[] Analytical results available	
	[] Analytical quality assurance/quality control (QA/QC) available
[] Chain of custody record	[] Analytical results available
	[] Chain of custody record

Zone: 1 - 5 Date: 4-22-13 Time: 10:00 [] AM [] PM

Analytical Sample Containers From: (Cheyenne BOPU) Dry Creek WRF To: (Cheyenne BOPU) Dry Creek WRF Laboratory

Dry Sludge for fecal results in MPN, and percent solids for Class A or Class B Biosolids. 1 quart Plastic bags 450 grams: 7 Quart Plastic bags total of 3150 grams. Fecal samples and results are analyzed at the Dry Creek WRF Laboratory in with six hours of the holding time. The results of fecal samples in (MPN) and (percent solids) need to be analyzed in, *February, April, June, August, October, and December. **January, March, May, July, September and November; test for TS and VS. Class A test for Helminth ova density limits > 1 egg/4g TS; Enteric virus density limits of > 1 PFU/4g

- 1. *' **Class A sludge < 1000 MPN/gram. (Test 12 times a year for TS and VS).
- 2. * Class B sludge < 2,000,000 MPN/gram
- 3. Percent solids, 75 % or better for Class A Biosolids and Class B Biosolids.
- 4. Chain of custody record

Zone: [] Rows: [] - [] Date: [] Time: [] Time: [] [] AM [] PM

Project Name: 310501165
Location: Dry Creek WRF.
Address: 8911 Camps tool Rd.
City: Cheyenne State: 12 1/ Zip Code: 8207.
City: Cheyenne State: 1/2 Zip Code: 8207. Samples Collected by: Chet Bankw. [Date/Time: 4-22-13f/0/00 p.m]
Analytical Certification
This certification must be completed by the Analytical Laboratory performing service for the Cheyenne Board of Public Utilities and submitted with each "Analytical Report.
"I certify that these analysis and resulting report (s) were prepared under my direction and supervision in accordance with a system designed to assure that qualified personal properly analyze all samples and accurately report the results. I certify that all analysis were performed in accordance with method approved for wastewater under the latest revision to 40 CFR Part 503 Sludge Regulation. Based on my inquiry of the person or persons who manage the system, or those person directly responsible for analyzing, the wastewater samples and generating the report (s), the analysis, report, and information submitted is to the best on my knowledge and belief, true, accurate, and completed."
Name of Laboratory: Dry Creek WRF
Address: 8911 Camps Tool Rd.
City: Cheyenne State: (14) Zip Code: 8200 /.
Name of Analyst:
This Certification is signed by:
Date: 6-28-13 Time: 0800 YAM [] PM

Cheyenne Board of Public Utilities Water Reclamation Laboratory

Chain of Custody and Analytical Request Record PLEASE PRINT CLEARLY, provide as much information as possible

		4
Page	 of	

Client's Name: Dry Creek L	⊇&È Contact Name:_(Chet Burk	·e1/	Sampler's Name (if c	other than Contact):_	
Report Required For:		1	IS REQUESTED	1 1 campio	Other	Analysis
n	~ A	Containers Sample Type		Preserved Type	Information	Completed
Progo 1.15 2000	2 UKOW)	Sample Type AWSVBO	1. 1 1			
•	1-5	Air Water		HNO₃ Grab	(pH, Field Analysis,	Yes / No
		Soils/Solids		H₂SO₄ or	etc.)	(Lab use only)
		<u>Vegetation</u>		4°C Composite		·
	, , , , , , , , , , , , , , , , , , , 	Bioassay	1 1 1	None		
SAMPLE IDENTIFICATION	Collection Collection Date Time	Other 2	3			
(Name, Location, etc.)	4-22 0845	MATRIX PIRATIC I I		Mark & E. D		
12 MeD ROW 1	9-72 0095	1526 9 Ben Chalce		NH C-rab		
2 2						
3 3						
4						
		 				
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Custody Relinquished by:		Date/Time:	Received by:	1 4		Date/Time:
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MUST be	1 W/	10:00 AM	I HHALK	JUNIV		
Signed					* * * *	593
Sample Disposal:	Return to client:	Lab disp		5000	Log#	000

Copies to:

White - Book in Laboratory

Yellow - Laboratory Hard Copy

Pink - Client

Attachment: #4. Dry Creek Water Reclamation Facility

F. Pathogen reduction is accomplished through anaerobic digestion. The primary and secondary digested sludge is treated in the absence of air for mean cell residence time and temperature between 25 and 35 days at 92 to 100 degrees Fahrenheit. Air dried sludge is obtained with a tractor aerator on paved drying beds and on site unpaved storage area in windrows that are turned approximately once a month dependant on the weather conditions.

The Biosolids production (dry weight) at the Dry Creek WRF is over 1500 metric tons a year. Therefore samples are collected six times a year (February, April, May, June, August, October, and December). The laboratories analyze the dry samples for metals, nutrients, organics pathogens, volatile solids and total solids.

CERTIFICATION STATEMENT

I certify under the penalty of law, that the pathogen requirements in Part I.C.3, the management practices in Part I.D (if necessary) (including the practice in part I.D.13 if the table 4 annual pollutant limits are used) and the site restrictions in Part I.C.2 (if necessary) have been met. This determination has been made under my direction and supervision in accordance with the system designed to assure that qualified personnel properly gather and evaluate the information used to determine that pathogen requirements, the vector attraction reduction requirements, the management practices and the site restrictions have been met. I am aware that there are significant penalties for false certification including the possibility of imprisonment.

Signature

Jim Hughes, Manager

Water Reclamation Division

Attachment: #5. Dry Creek Water Reclamation Facility

G. Vector attraction reduction requirements are met through anaerobic digestion when there is thirty eight percent or more reduction in volatile solids. Volatile solids destruction is measured weight by volume average ((Vol. Solids Reduction = VS in - VS out / (VS in -((VS in * VS out)) (Use Average). The sludge is also air dried in windrows for further vector attraction reduction. The dry solids in windrows are between 65% to 80% total volatile solids reduction before land application.

RE: Flows From: Primary North and Primary South Raw sludge Average: Total solids (change % to Mg/l (10000) (NRS & SRS): Total Vol Solids (NRS & SRS): Total C-2 (wasting) cake flow gal: C-1 (digested) Solids (mg/L) cake: C-1 Vol solids cake (mg/L): C-2 solids cake (mg/L): C-2 Vol Solids cake (mg/L) Cake flow from Rotary Drum Thicker to digester.

CERTIFICATION STATEMENT

I certify under the penalty of law, that the pathogen requirements in Part I.C.2, one of the vector attraction alternatives in Part I.C.3, the necessary) practices in part I.D (if (including practices in Part I.D.13 if the table 4 annual pollutant limits are used) and the site restrictions in part I.C.2 (if necessary) have been met. This determination has been made under my direction and supervision in accordance with information used to determine that the requirements, the vector attraction reduction requirements, the management practices and the site restrictions have been met. I am aware that there are significant penalties for false certification including the possibility imprisonment.

Signature

Jim Hughes, Manager

Water Reclamation Division

Attachment: #6. Dry Creek Water Reclamation Facility

H. Best management practices are accomplished by applying biosolids at a whole sludge application rate that is less than or equal to the agronomic rate for the specific site and plant species. The Biosolids are applied so that it does not adversely affect a threatened or endangered species.

Biosolids are not dispersed on sites that are flooded or snow covered, frozen ground with a slope of three percent or more to prevent run off into wetland or surface water. A buffer zone of thirty-five feet from waterways, stock wells, and surface water is observed. Biosolids land applications are prohibited to sites where the available phosphorous content of the existing soil exceeds 400 pounds per acre.

Stored Biosolids on the plant facility remain in windrows for two years or less. The Biosolids are land applied in the winter, spring and fall of the year, weather permitting. Biosolids and soil are analytically tested before disposal. Cheyenne's sludge management practice ensures compliance with both Federal and State parameters and provides for long term Biosolids procedures with little or no detriment to the environment, while enhancing the native grass and field crop production of those participating ranchers and farmers who utilize Biosolids as a fertilizer supplement and soil conditioner.

CERTIFICATION STATEMENT

I certify under the penalty of law that the pathogen requirements in Part I.C.2, one of the vector attraction reduction alternatives I.C.3, in Part the management practices in part I.D (if necessary) (including in the practices in Part I.D.13 if the table 4 annual pollutant limits are used) and the site restrictions in Part I.C.2 (if necessary) have been met. This determination has been made under my direction and supervision in accordance with the system designed to assure that qualified personal properly gather and evaluate the information used to determine that the pathogen requirements, the management practices and the site restrictions have been met. I am aware that there are significant penalties for false certification including the possibility of imprisonment.

Signature

Jim Hughes, Manager

Water Reclamation Division Attachment: #7.

Dry Creek Water Reclamation Facility

I. Site restrictions are first achieved through the quality of sewage sludge product which has been stabilized to reduce pathogenic organisms, which has been dried to a solids concentration of sixty percentile or greater and contains no hazardous or toxic compounds or chemicals in concentrations which exceed those authorized by the USA EPA REGION VIII and WYOMING DEQ for land application in Part C.1, Specific Limitations and Self Monitoring Requirements and Chemical Pollutant Limitations.

The dry sludge that is produced is class \underline{A} and \underline{B} which are applied primarily to range land. Before applying sewage sludge on rangeland, pastureland, farm land, or fields, soil samples have been collected and have had the appropriate soil analysis conducted.

The <u>Class B</u> Sludge with respect to pathogens has been in compliance with the entire site restrictions listed in Part I.C.2. No sludge or material derived from sludge exceeds the limits in Table 3 Part I.C.1. The <u>Class A</u> pathogen reduction limits in Part I.C.2 meets the first 4 vector attraction reduction alternatives in Part I.C.3. There are sufficient management practices used to prevent malfunctions and deterioration, operator errors and discharges which may cause or lead to the release of sludge to the environment, a threat to human health or a nuisance.

CERTIFICATION STATEMENT

I certify under the penalty of law, that the pathogen requirements in Part I.C.2, one of the vector attraction I.C.3, alternatives \mathtt{in} Part the management practices in Part I.D (if necessary) including the practice in Part I.D.13 if the table 4 annual pollutant limits are used) and the site restrictions in Part I.C.2 (if necessary) have been met. This determination has been made under my direction and supervision in accordance with the system designed to assure that qualified personnel properly gather and evaluate the information used to determine that the pathogen requirements, the vector attractions reduction requirements, the management practices and the restrictions have been met. I am aware that there are significant penalties for false certification including the possibility of imprisonment.

Signature /

Jim Hughes, Manager



ANALYTICAL RESULTS

DRY CREEK WWTP LABORATORY

Cheyenne BOPU 8911 Campstool Road Cheyenne, Wyoming 82007 Phone: 307-635-3163 Fax: 307-635-6833

Date Sampled: 04/22/13

Date Received: 04/22/13

Sample Location: Zone C Sample Matrix: Compost

Sampled By: CB

Date Reported: 05/08/13

Date Fecal Analyzed: 4/22/13 Date Solids Analyzed: 04/22/13

Analyst(s): mw

EPA Method/Total Solids:

SM 19th Ed 2540B

EPA Method/Volatile Solids: SM 19th Ed 2540E

EPA Method/Fecal Coliform: SM 18th Ed 9221E (A-1 Media)

Row#	Total Solids %	Volatile Solids%	Fecal Coliform/ Dry Gram Sludge
1	86.2	34.6	<377 .
2	92.6	23.6	<351
3	88.1	31.6	<369
4	86.2	39.8	<377
5	89.4	35.1	<364
6	85.2	47.7	423
7	86.2	45.7	<377

Comments:

All data meets QA/QC requirements; please see QA/QC files in Dry Creek Laboratory. NA = Not Analyzed

Kent Loader, Laboratory Supervisor

Page 1 of 1

Dry Creek WRF Laboratory For: Fecal, TS & VS

Identification Reporting: No. WYSL - 22934

Permit No. WYG - <u>650002</u>

(Cheyenne BOPU) Dry Creek Water Reclamation Facility

Samples and Analytical

Quality Assurance/Quality Control OA/QC

Date: 4-22- 13 | Time: 1010017-m | [] AM [] PM

Analytical Sampling Records (Cheyenne BOPU) Dry Creek WRF Laboratory

[] Dates and time of samples collected
[] Sampling location documented
[] Sampling types appropriate
[] Sampling volumes recorded
[] Name of person sampling
[] Types of sampling containers
[] Methods of preservation
[] Sampling quality assurance/ quality control QA/QC available
[] Pollutant limits red flagged if over mg/kg (Table 1,2,3,4 and Section 503.13) (Class A and B Biosolids)
[] Certification statement signed with each laboratory analytical report:
1. Pathogen reduction
2. Vector attraction reduction operates at Dry Creek WRF analysis samples. Results from daily sheets and results, recorded daily.
3. Management Practices
4. Site restrictions
[] Class A sludge: average temperature, (volatile solids percent) and total solids Dry sludge) once a month. Turn rows once a month, <u>weather permitting</u> .
[] Chain of custody recorded
Date: 4-22-15 Time: 10',00 [] AM [] PM

Analytical Records From: (Cheyenne BOPU) Dry Creek WRF To: (Cheyenne BOPU) Dry Creek WRF Laboratory

[] Date and time of samples analysis

[] Name of analyst		
[] All analyses are reported on dry weig	ght basis	
[] Dry Creek WRF Laboratory 8911 Campstool Rd. Cheyenne, WY 82007 Ph: 307-635-3163 Fax: 307-635-6833		
[] Analytical quality assurance/quality	control (QA/QC) available	
[] Analytical results available		
[] Chain of custody record		•
Date: 4-22-13] Time: 10 100	_] [] AM [] PM

Analytical Records From: (Cheyenne BOPU) Dry Creek WRF To: (Cheyenne BOPU) Dry Creek WRF Laboratory

[] Date and time of sample
[] Name of analyst
[] Analytical methods used
[] Analyses and calculation results properly documented or verified
[] All analysis are reported on dry weight basis with the exception of volatile solid or total solids in percent. (1quart plastic bag 450 grams) (7 quart plastic bags 3150 grams).
[] Volatile solids and total solids samples need to be analyzed six times a year for Class B Biosolids and 12 times a year for Class A Biosolids.
[] Analytical quality assurance/quality control (QA/QC) available
[] Analytical results available
[] Chain of custody record

Analytical Sample Containers From: (Cheyenne BOPU) Dry Creek WRF To: (Cheyenne BOPU) Dry Creek WRF Laboratory

Dry Sludge for fecal results in MPN, and percent solids for Class A or Class B Biosolids. 1 quart Plastic bags 450 grams: 7 Quart Plastic bags total of 3150 grams. Fecal samples and results are analyzed at the Dry Creek WRF Laboratory in with six hours of the holding time. The results of fecal samples in (MPN) and (percent solids) need to be analyzed in, *February, April, June, August, October, and December. **January, March, May, July, September and November; test for TS and VS. Class A test for Helminth ova density limits > 1 egg/4g TS; Enteric virus density limits of > 1 PFU/4g

- 1. *' **Class A sludge < 1000 MPN/gram. (Test 12 times a year for TS and VS).
- 2. * Class B sludge < 2,000,000 MPN/gram
- 3. Percent solids, 75 % or better for Class A Biosolids and Class B Biosolids.
- 4. Chain of custody record

Zone: [] Rows: 1 - 7 | Date: 4-22-13 | Time: 10,00 | [] AM [] PM

Project Name: Bio50/id5
Location: Dry Creek WRF.
Address: 89/1 Camps Tool Rd.
City: Cheyenne State: Lyy Zip Code: 82007.
Samples Collected by: Chet Busy (Date/Time: 4-22-13/10/00/7m)
Analytical Certification
This certification must be completed by the Analytical Laboratory performing service for the Cheyenne Board of Public Utilities and submitted with each "Analytical Report.
"I certify that these analysis and resulting report (s) were prepared under my direction and supervision in accordance with a system designed to assure that qualified personal properly analyze all samples and accurately report the results. I certify that all analysis were performed in accordance with method approved for wastewater under the latest revision to 40 CFR Part 503 Sludge Regulation. Based on my inquiry of the person or persons who manage the system, or those person directly responsible for analyzing, the wastewater samples and generating the report (s), the analysis, report, and information submitted is to the best on my knowledge and belief, true, accurate, and completed."
Name of Laboratory: Dry Creek WRI .
Address: 89/1 Cump, toolRd.
City: Cheyenne State: Zip Code: 8207.
Name of Analyst:
This Certification is signed by:
Date: 6-78-13 Time: 6800 JAM [] PM







Cheyenne Board of Public Utilities Water Reclamation Laboratory

Chain of Custody and Analytical Request Record
PLEASE PRINT CLEARLY, provide as much information as possible

-	1			
Page		ot _	-/	

Client's Name: Dry Crock W/P	Contact Name:_	Let Burk.	Sampler's Name (if	other than Contact):
Report Required For:	15	Containers	REQUESTED How Sample Preserved Type	Other Analysis Information Completed
ZONE C RUWS	1-7	Sample Type A W S V B O Air <u>W</u> ater Soils/Solids Yegetation Bioassay	HNO ₃ Grab H ₂ SO ₄ or 4°C Composit HCL None	(pH, Field Analysis, etc.) Yes / No (Lab use only)
SAMPLE IDENTIFICATION (Name, Location, etc.)	Collection Collection Date Time	Other S S		
120ne & Rowl	H-13 0845	1543/16 1563 De VSkides	MA Gyab	·
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Custody Record MUST be	W.	Date/Time: 4 - 22-13 10,60 A-M	Received by:	Date/Time:
Signed Sample Disposal:	Return to client:	Lab dispos	al:	Log# 592

Copies to:

White - Book in Laboratory

Yellow - Laboratory Hard Copy

Pink - Client

Attachment: #4. Dry Creek Water Reclamation Facility

F. Pathogen reduction is accomplished through anaerobic digestion. The primary and secondary digested sludge is treated in the absence of air for mean cell residence time and temperature between 25 and 35 days at 92 to 100 degrees Fahrenheit. Air dried sludge is obtained with a tractor aerator on paved drying beds and on site unpaved storage area in windrows that are turned approximately once a month dependant on the weather conditions.

The Biosolids production (dry weight) at the Dry Creek WRF is over 1500 metric tons a year. Therefore samples are collected six times a year (February, April, May, June, August, October, and December). The laboratories analyze the dry samples for metals, nutrients, organics pathogens, volatile solids and total solids.

CERTIFICATION STATEMENT

I certify under the penalty of law, that the pathogen requirements in Part I.C.3, the management practices in Part I.D (if necessary) (including the practice in part I.D.13 if the table 4 annual pollutant limits are used) and the site restrictions in Part I.C.2 (if necessary) have been met. This determination has been made under my direction and supervision in accordance with the system designed to assure that qualified personnel properly gather and evaluate the information used to determine that pathogen requirements, the vector attraction reduction requirements, the management practices and the site restrictions have been met. I am aware that there are significant penalties for false certification including the possibility of imprisonment.

Signature

Jim Wughes, Manager

Water Reclamation Division

Attachment: #5. Dry Creek Water Reclamation Facility

G. Vector attraction reduction requirements are met through anaerobic digestion when there is thirty eight percent or more reduction in volatile solids. Volatile solids destruction is measured weight by volume average ((Vol. Solids Reduction = VS in - VS out / (VS in -((VS in * VS out)) (Use Average). The sludge is also air dried in windrows for further vector attraction reduction. The dry solids in windrows are between 65% to 80% total volatile solids reduction before land application.

RE: Flows From: Primary North and Primary South Raw sludge Average: Total solids (change % to Mg/l (10000) (NRS & SRS): Total Vol Solids (NRS & SRS): Total C-2 (wasting) cake flow gal: C-1 (digested) Solids (mg/L) cake: C-1 Vol solids cake (mg/L): C-2 solids cake (mg/L): C-2 Vol Solids cake (mg/L) Cake flow from Rotary Drum Thicker to digester.

CERTIFICATION STATEMENT

I certify under the penalty of law, that the pathogen requirements in Part I.C.2, one of the vector attraction Part I.C.3, alternatives in the management practices in part I.D (if necessary) (including practices in Part I.D.13 if the table 4 annual pollutant limits are used) and the site restrictions in part I.C.2 (if necessary) have been met. This determination has been made under my direction and supervision in accordance with information used to determine that the requirements, the vector attraction reduction requirements, the management practices and the site restrictions have been met. I am aware that there are significant penalties for false certification including the possibility imprisonment.

Signature

Jim Hughes, Manager

Water Reclamation Division

Attachment: #6. Dry Creek Water Reclamation Facility

H. Best management practices are accomplished by applying biosolids at a whole sludge application rate that is less than or equal to the agronomic rate for the specific site and plant species. The Biosolids are applied so that it does not adversely affect a threatened or endangered species.

Biosolids are not dispersed on sites that are flooded or snow covered, frozen ground with a slope of three percent or more to prevent run off into wetland or surface water. A buffer zone of thirty-five feet from waterways, stock wells, and surface water is observed. Biosolids land applications are prohibited to sites where the available phosphorous content of the existing soil exceeds 400 pounds per acre.

Stored Biosolids on the plant facility remain in windrows for two years or less. The Biosolids are land applied in the winter, spring and fall of the year, weather permitting. Biosolids and soil are analytically tested before disposal. Cheyenne's sludge management practice ensures compliance with both Federal and State parameters and provides for long term Biosolids procedures with little or no detriment to the environment, while enhancing the native grass and field crop production of those participating ranchers and farmers who utilize Biosolids as a fertilizer supplement and soil conditioner.

CERTIFICATION STATEMENT

I certify under the penalty of law that the pathogen requirements in Part I.C.2, one of the vector attraction reduction alternatives I.C.3, in Part the management practices in part I.D (if necessary) (including in the practices in Part I.D.13 if the table 4 annual pollutant limits are used) and the site restrictions in Part I.C.2 (if necessary) have been met. This determination has been made under my direction and supervision in accordance with the system designed to assure that qualified personal properly gather and evaluate the information used to determine that the pathogen requirements, the management practices and the site restrictions have been met. I am aware that there are significant penalties for false certification including the possibility of imprisonment.

Signature

Jim Hughes, Manager

Water Reclamation Division Attachment: #7.

Dry Creek Water Reclamation Facility

I. Site restrictions are first achieved through the quality of sewage sludge product which has been stabilized to reduce pathogenic organisms, which has been dried to a solids concentration of sixty percentile or greater and contains no hazardous or toxic compounds or chemicals in concentrations which exceed those authorized by the USA EPA REGION VIII and WYOMING DEQ for land application in Part C.1, Limitations and Self Monitoring Requirements and Chemical Pollutant Limitations.

The dry sludge that is produced is class A and B which are applied primarily to range land. Before applying sewage sludge on rangeland, pastureland, farm land, or fields, soil samples have been collected and have had the appropriate soil analysis conducted.

The Class B Sludge with respect to pathogens has been in compliance with the entire site restrictions listed in Part I.C.2. No sludge or material derived from sludge exceeds the limits in Table 3 Part I.C.1. The Class A pathogen reduction limits in Part I.C.2 meets the first 4 vector attraction reduction alternatives in Part I.C.3. There are sufficient management practices used to prevent malfunctions deterioration, operator errors and discharges which may cause or lead to the release of sludge to the environment, a threat to human health or a nuisance.

CERTIFICATION STATEMENT

I certify under the penalty of law, that the pathogen requirements in Part I.C.2, one of the vector attraction reduction alternatives in Part I.C.3, the management practices in Part I.D (if necessary) including the practice in Part I.D.13 if the table 4 annual pollutant limits are used) and the site restrictions in Part I.C.2 (if necessary) have been met. This determination has been made under my direction and supervision in accordance with the system designed to assure that qualified personnel properly gather and evaluate the information used to determine that the pathogen requirements, the vector attractions reduction requirements, the management and practices restrictions have been met. I am aware that there are significant penalties for false certification including the possibility of imprisonment.

Signature Jim Hughes, Manager



ANALYTICAL RESULTS

DRY CREEK WWTP LABORATORY

Cheyenne BOPU 8911 Campstool Road Cheyenne, Wyoming 82007 Phone: 307-635-3163 Fax: 307-635-6833

Date Sampled: 02/25/13

Sample Location: Zone E Sample Matrix: Compost

Date Received: 02/25/13

Sampled By: CB

Date Reported: 03/05/13

Date Fecal Analyzed: 02/25/13 Date Solids Analyzed: 02/26/13

Analyst(s): mw

EPA Method/Total Solids:

SM 19th Ed 2540B

EPA Method/Volatile Solids: SM 19th Ed 2540E

EPA Method/Fecal Coliform: SM 18th Ed 9221E (A-1 Media)

Fecal Coliform/

Row #	Total Solids %	Volatile Solids %	Dry Gram Sludge
1	79.5	40.6	<409
2	80.5	38.6	<403
3	78.0	46.0	<416
4	84.4	43.3	855
5	85.6	38.3	<380
6	84.6	40.3	383
7	82.8	44.4	<392
8	87.9	35.6	<369
9	83.7	43.7	<388

Comments:

All data meets QA/QC requirements; please see QA/QC files in Dry Creek Laboratory.

NA = Not_Analyzed

Kent Loader, Laboratory Supervisor

Page 1 of 1

<u>Pry Creek WRF Laboratory</u> <u>For: Fecal, TS & VS</u>

Identification Reporting: No. WYSL - 22934

Permit No. WYG - <u>650002</u>

(Cheyenne BOPU) Dry Creek Water Reclamation Facility

Samples and Analytical

Quality Assurance/Quality Control OA/QC

Date: 2-25-13 | Time: 10:50 | []AM [] PM

Analytical Sampling Records (Cheyenne BOPU) Dry Creek WRF Laboratory

[] Dates and time of samples collected
[] Sampling location documented
[] Sampling types appropriate
[] Sampling volumes recorded
[] Name of person sampling
[] Types of sampling containers
[] Methods of preservation
[] Sampling quality assurance/ quality control QA/QC available
[] Pollutant limits red flagged if over mg/kg (Table 1,2,3,4 and Section 503.13) (Class A and B Biosolids)
[] Certification statement signed with each laboratory analytical report:
1. Pathogen reduction
2. Vector attraction reduction operates at Dry Creek WRF analysis samples. Results from daily sheets and results, recorded daily.
3. Management Practices
4. Site restrictions
[] Class A sludge: average temperature, (volatile solids percent) and total solids Dry sludge) once a month. Turn rows once a month, <u>weather permitting</u> .
[] Chain of custody recorded
Date: 2-25-13 Time: 10,50 [] AM PM

Analytical Records From: (Cheyenne BOPU) Dry Creek WRF To: (Cheyenne BOPU) Dry Creek WRF Laboratory

[] Date and time of samples analysis
[] Name of analyst
[] All analyses are reported on dry weight basis
[] Dry Creek WRF Laboratory 8911 Campstool Rd. Cheyenne, WY 82007 Ph: 307-635-3163 Fax: 307-635-6833
[] Analytical quality assurance/quality control (QA/QC) available
[] Analytical results available
[] Chain of custody record

Analytical Records From: (Cheyenne BOPU) Dry Creek WRF To: (Cheyenne BOPU) Dry Creek WRF Laboratory

[] Date and time of sample
[] Name of analyst
[] Analytical methods used
[] Analyses and calculation results properly documented or verified
[] All analysis are reported on dry weight basis with the exception of volatile solids or total solids in percent. (1quart plastic bag 450 grams) (7 quart plastic bags 3150 grams).
[] Volatile solids and total solids samples need to be analyzed six times a year for Class B Biosolids and 12 times a year for Class A Biosolids.
[] Analytical quality assurance/quality control (QA/QC) available
[] Analytical results available
[] Chain of custody record

Zone: E Rows: 1 - 9 Date: 2-25-B Time: 10'50' [] M [] PM

Analytical Sample Containers From: (Cheyenne BOPU) Dry Creek WRF To: (Cheyenne BOPU) Dry Creek WRF Laboratory

Dry Sludge for fecal results in MPN, and percent solids for Class A or Class B Biosolids. 1 quart Plastic bags 450 grams: 7 Quart Plastic bags total of 3150 grams. Fecal samples and results are analyzed at the Dry Creek WRF Laboratory in with six hours of the holding time. The results of fecal samples in (MPN) and (percent solids) need to be analyzed in, *February, April, June, August, October, and December. **January, March, May, July, September and November; test for TS and VS. Class A test for Helminth ova density limits > 1 egg/4g TS; Enteric virus density limits of > 1 PFU/4g

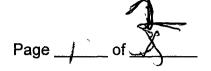
- 1. *' **Class A sludge < 1000 MPN/gram. (Test 12 times a year for TS and VS).
- 2. * Class B sludge < 2,000,000 MPN/gram
- 3. Percent solids, 75 % or better for Class A Biosolids and Class B Biosolids.
- 4. Chain of custody record

Zone: \boxed{E} Rows: $\boxed{-9}$ Date: $\boxed{2-25-\beta}$ Time: $\boxed{0.50}$ [] AM [] PM

Project Name: B10501119
Location: Nry Creek WLF.
Address: 89// Cum pstool RJ
City: Cheyenne State: 1/1 Zip Code: 82007.
City: Cheyenre State: 1/2 Zip Code: 8 2007. Samples Collected by: Chet Birkell. [Date/Time: 2-25-13/10/5
Analytical Certification
This certification must be completed by the Analytical Laboratory performing service for the Cheyenne Board of Public Utilities and submitted with each "Analytical Report.
"I certify that these analysis and resulting report (s) were prepared under my direction and supervision in accordance with a system designed to assure that qualified personal properly analyze all samples and accurately report the results. I certify that all analysis were performed in accordance with method approved for wastewater under the latest revision to 40 CFR Part 503 Sludge Regulation. Based on my inquiry of the person or persons who manage the system, or those person directly responsible for analyzing, the wastewater samples and generating the report (s), the analysis, report, and information submitted is to the best on my knowledge and belief, true, accurate, and completed."
Name of Laboratory: Dry Creck WRF.
Name of Laboratory: Dry creck wrf. Address: 891/2 campstal Rd.
City: Cheyenne State: Wy Zip Code: 82007.
Name of Analyst:
Name of Analyst: This Certification is signed by: .
Date: 6-28-13 Time: 0800 JAM [] PM

Cheyenne Board of Public Utilities Water Reclamation Laboratory

Chain of Custody and Analytical Request Record
PLEASE PRINT CLEARLY, provide as much information as possible



A	J.C.	(L.L)				
Report Required For:	<u> </u>	Number of ANALY	SIS REQUESTED	1 ton Campio	Other	Analysis
Pardou lids	1-7	Containers Sample Type AWSVBO		Preserved Type HNO ₃ Grab	Information (pH, Field Analysis,	Completed Yes / No
ZONP E Rows		Soils/Solids Yegetation Bioassay			Composite L	
SAMPLE IDENTIFICATION (Name, Location, etc.)	Collection Collection Date Time	Other MATRIX	3			
17 MARE ROWL	2-35 130	18/45/16 13/		MA Grab		
2						
3						
4						
5						
6				1		
7 1 1 1 1		1, 11	1	1 1		
Custody Relinquished by:	Dev	Date/Time: 2-25-13 10-50 A VV	Received by:			Date/Time:
Signed Sample Disposal:	Return to client:	Lab di	sposal:		Log#	575

Copies to:

White - Book in Laboratory

Yellow - Laboratory Hard Copy

Pink - Client

Cheyenne Board of Public Utilities Water Reclamation Laboratory

Chain of Custody and Analytical Request Record PLEASE PRINT CLEARLY, provide as much information as possible



Client's Name:	1 CVPPE	U.S. Cont	act Name:_	1/11	<i>J.</i>	1] je	W	iN	_	Sampler's	Name (if o	ther than Contact):_	
Report Required For: 1 10/20 / 11/5 Zore E Rows 8-9			Number of Containers Sample Type A W S V B O Air Water Soils/Solids Yegetation Bioassay			BIS	IS REQUESTE		ED	How Preserved HNO ₃ H ₂ SO ₄	Sample	Other Information (pH, Field Analysis, etc.)	Analysis Completed Yes / No (Lab use only)	
SAMPLE IDEN (Name, Loca		Collection Date	Collection Time	<u>Q</u> ther MATRIX	7	川	2)	
120h & E	Row 8	2-25	130 An	PP10350 PEKKU	į		-				NA	(-/p)		
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Custody Record MUST be	Relinquished by:	·AW		Date/Time:	0 1	13	1	Receiv	ved by		Uni)		Date/Time:
Signed	Sample Disposal:	Return to	o client:	,	_ La	ab dis	posa	al:				,	Log#	675
	ID# 10 /\/			Permi			-	1	(j-	6	6000	11_		

Attachment: #4. Dry Creek Water Reclamation Facility

F. Pathogen reduction is accomplished through anaerobic digestion. The primary and secondary digested sludge is treated in the absence of air for mean cell residence time and temperature between 25 and 35 days at 92 to 100 degrees Fahrenheit. Air dried sludge is obtained with a tractor aerator on paved drying beds and on site unpaved storage area in windrows that are turned approximately once a month dependant on the weather conditions.

The Biosolids production (dry weight) at the Dry Creek WRF is over 1500 metric tons a year. Therefore samples are collected six times a year (February, April, May, June, August, October, and December). The laboratories analyze the dry samples for metals, nutrients, organics pathogens, volatile solids and total solids.

CERTIFICATION STATEMENT

I certify under the penalty of law, that the pathogen requirements in Part I.C.3, the management practices in Part I.D (if necessary) (including the practice in part I.D.13 if the table 4 annual pollutant limits are used) and the site restrictions in Part I.C.2 (if necessary) have been met. This determination has been made under my direction and supervision in accordance with the system designed to assure that qualified personnel properly gather and evaluate the information used to determine that pathogen requirements, the vector attraction reduction requirements, the management practices and the site restrictions have been met. I am aware that there are significant penalties for false certification including the possibility of imprisonment.

Signature

Jim Hughes, Manager

Water Reclamation Division

Attachment: #5. Dry Creek Water Reclamation Facility

G. Vector attraction reduction requirements are met through anaerobic digestion when there is thirty eight percent or more reduction in volatile solids. Volatile solids destruction is measured weight by volume average ((Vol. Solids Reduction = VS in - VS out / (VS in -(VS in * VS out)) (Use Average). The sludge is also air dried in windrows for further vector attraction reduction. The dry solids in windrows are between 65% to 80% total volatile solids reduction before land application.

RE: Flows From: Primary North and Primary South Raw sludge Average: Total solids (change % to Mg/l (10000) (NRS & SRS): Total Vol Solids (NRS & SRS): Total C-2 (wasting) cake flow gal: C-1 (digested) Solids (mg/L) cake: C-1 Vol solids cake (mg/L): C-2 solids cake (mg/L): C-2 Vol Solids cake (mg/L) Cake flow from Rotary Drum Thicker to digester.

CERTIFICATION STATEMENT

I certify under the penalty of law, that the pathogen requirements in Part I.C.2, one of the vector attraction reduction alternatives in Part I.C.3, the management practices in part I.D (if necessary) (including practices in Part I.D.13 if the table 4 annual pollutant limits are used) and the site restrictions in part I.C.2 (if necessary) have been met. This determination has been made under my direction and supervision in accordance with information used to determine that the requirements, the vector attraction reduction requirements, the management practices and the site restrictions have been met. I am aware that there are significant penalties for certification including the possibility imprisonment.

Signature

Jim Hughes, Manager

Water Reclamation Division

Attachment: #6. Dry Creek Water Reclamation Facility

H. Best management practices are accomplished by applying biosolids at a whole sludge application rate that is less than or equal to the agronomic rate for the specific site and plant species. The Biosolids are applied so that it does not adversely affect a threatened or endangered species.

Biosolids are not dispersed on sites that are flooded or snow covered, frozen ground with a slope of three percent or more to prevent run off into wetland or surface water. A buffer zone of thirty-five feet from waterways, stock wells, and surface water is observed. Biosolids land applications are prohibited to sites where the available phosphorous content of the existing soil exceeds 400 pounds per acre.

Stored Biosolids on the plant facility remain in windrows for two years or less. The Biosolids are land applied in the winter, spring and fall of the year, weather permitting. Biosolids and soil are analytically tested before disposal. Cheyenne's sludge management practice ensures compliance with both Federal and State parameters and provides for long term Biosolids procedures with little or no detriment to the environment, while enhancing the native grass and field crop production of those participating ranchers and farmers who utilize Biosolids as a fertilizer supplement and soil conditioner.

CERTIFICATION STATEMENT

I certify under the penalty of law that the pathogen requirements in Part I.C.2, one of the vector attraction reduction alternatives I.C.3, in Part the practices in part I.D (if necessary) (including in the practices in Part I.D.13 if the table 4 annual pollutant limits are used) and the site restrictions in Part I.C.2 (if necessary) have been met. This determination has been made under my direction and supervision in accordance with the system designed to assure that qualified personal properly gather and evaluate the information used to determine that the pathogen requirements, the management practices and the site restrictions have been met. I am aware that there are significant penalties for false certification including the possibility of imprisonment.

Signature

Ji∰ Hugheš, Manager

Water Reclamation Division Attachment: #7.

Dry Creek Water Reclamation Facility

I. Site restrictions are first achieved through the quality of sewage sludge product which has been stabilized to reduce pathogenic organisms, which has been dried to a solids concentration of sixty percentile or greater and contains no hazardous or toxic compounds or chemicals in concentrations which exceed those authorized by the USA EPA REGION VIII and WYOMING DEQ for land application in Part C.1, Specific Limitations and Self Monitoring Requirements and Chemical Pollutant Limitations.

The dry sludge that is produced is class A and B which are applied primarily to range land. Before applying sewage sludge on rangeland, pastureland, farm land, or fields, soil samples have been collected and have had the appropriate soil analysis conducted.

The Class B Sludge with respect to pathogens has been in compliance with the entire site restrictions listed in Part I.C.2. No sludge or material derived from sludge exceeds the limits in Table 3 Part I.C.1. The Class A pathogen reduction limits in Part I.C.2 meets the first 4 vector attraction reduction alternatives in Part I.C.3. There are sufficient management practices used to prevent malfunctions and deterioration, operator errors and discharges which may cause or lead to the release of sludge to the environment, a threat to human health or a nuisance.

CERTIFICATION STATEMENT

I certify under the penalty of law, that the pathogen requirements in Part I.C.2, one of the vector attraction reduction alternatives in Part I.C.3, the management practices in Part I.D (if necessary) including the practice in Part I.D.13 if the table 4 annual pollutant limits are used) and the site restrictions in Part I.C.2 (if necessary) have been met. This determination has been made under my direction and supervision in accordance with the system designed to assure that qualified personnel properly gather and evaluate the information used to determine that the pathogen requirements, the vector attractions reduction requirements, the management practices and restrictions have been met. I am aware that there are significant penalties for false certification including the possibility of imprisonment.

Signature /

Jim Hughes, Manager



ANALYTICAL RESULTS

DRY CREEK WWTP LABORATORY

Cheyenne BOPU 8911 Campstool Road Cheyenne, Wyoming 82007 Phone: 307-635-3163 Fax: 307-635-6833

Date Sampled: 02/25/13

Date Received: 02/25/13

Sample Location: Zone D

Sample Matrix: Compost

Sampled By: CB

Date Reported: 03/05/13

Date Fecal Analyzed: 02/25/13 Date Solids Analyzed: 02/26/13

Analyst(s): mw

EPA Method/Total Solids:

SM 19th Ed 2540B

EPA Method/Volatile Solids: SM 19th Ed 2540E

EPA Method/Fecal Coliform: SM 18th Ed 9221E (A-1 Media)

Row #	Total Solids %	Volatile Solids%	Fecal Coliform/ Dry Gram Sludge		
1	86.9	40.5	<374		
2	86.6	44.8	<375		
3	84.8	44.7	<383		
4	87.8	42.3	<370		
	947	47.1	-204		

Comments:

All data meets QA/QC requirements; please see QA/QC files in Dry Creek Laboratory. NA = Not Analyzed

Kent Loader, Laboratory Supervisor

Date:

Dry Creek WRF Laboratory For: Fecal, TS & VS

Identification Reporting: No. WYSL - 22934

Permit No. WYG - 650002

(Cheyenne BOPU) Dry Creek Water Reclamation Facility

Samples and Analytical

Quality Assurance/Quality Control OA/QC

Date: 2-25 13 | Time: 10.50 | [] AM [] PM

Analytical Sampling Records (Cheyenne BOPU) Dry Creek WRF Laboratory

[] Dates and time of samples collected
[] Sampling location documented
[] Sampling types appropriate
[] Sampling volumes recorded
[] Name of person sampling
[] Types of sampling containers
[] Methods of preservation
[] Sampling quality assurance/ quality control QA/QC available
[] Pollutant limits red flagged if over mg/kg (Table 1,2,3,4 and Section 503.13) (Class A and B Biosolids)
[] Certification statement signed with each laboratory analytical report:
1. Pathogen reduction
2. Vector attraction reduction operates at Dry Creek WRF analysis samples. Results from daily sheets and results, recorded daily.
3. Management Practices
4. Site restrictions
[] Class A sludge: average temperature, (volatile solids percent) and total solids Dry sludge) once a month. Turn rows once a month, <u>weather permitting</u> .
[] Chain of custody recorded
Date: $2-25-13$ Time: $10'5-0$ [] (AM/) PM

Analytical Records From: (Cheyenne BOPU) Dry Creek WRF To: (Cheyenne BOPU) Dry Creek WRF Laboratory

[] Date and time of samples analysis
[] Name of analyst
[] All analyses are reported on dry weight basis
[] Dry Creek WRF Laboratory 8911 Campstool Rd. Cheyenne, WY 82007 Ph: 307-635-3163 Fax: 307-635-6833
[] Analytical quality assurance/quality control (QA/QC) available
[] Analytical results available
[] Chain of custody record

Date: 3-25-13 | Time: 10 150 | [] (M) PM

Analytical Records From: (Cheyenne BOPU) Dry Creek WRF To: (Cheyenne BOPU) Dry Creek WRF Laboratory

	Date and time of sample
[]	Name of analyst
()	Analytical methods used
0	Analyses and calculation results properly documented or verified
[]	All analysis are reported on dry weight basis with the exception of volatile solids or total solids in percent. (1quart plastic bag 450 grams) (7 quart plastic bags 3150 grams).
[]	Volatile solids and total solids samples need to be analyzed six times a year for Class B Biosolids and 12 times a year for Class A Biosolids.
	Analytical quality assurance/quality control (QA/QC) available
	Analytical results available
[]	Chain of custody record

Zone: $\boxed{1}$ Rows: $\boxed{1}$ - $\boxed{5}$ Date: $\boxed{2}$ - $\boxed{2}$ Time: $\boxed{10',50'}$ [] $\boxed{4M'}$ PM

Analytical Sample Containers From: (Cheyenne BOPU) Dry Creek WRF To: (Cheyenne BOPU) Dry Creek WRF Laboratory

Dry Sludge for fecal results in MPN, and percent solids for Class A or Class B Biosolids. 1 quart Plastic bags 450 grams: 7 Quart Plastic bags total of 3150 grams. Fecal samples and results are analyzed at the Dry Creek WRF Laboratory in with six hours of the holding time. The results of fecal samples in (MPN) and (percent solids) need to be analyzed in, *February, April, June, August, October, and December. **January, March, May, July, September and November; test for TS and VS. Class A test for Helminth ova density limits > 1 egg/4g TS; Enteric virus density limits of > 1 PFU/4g

- 1. *' **Class A sludge < 1000 MPN/gram. (Test 12 times a year for TS and VS).
- 2. * Class B sludge < 2,000,000 MPN/gram
- 3. Percent solids, 75 % or better for Class A Biosolids and Class B Biosolids.
- 4. Chain of custody record

2-25-13

Zone: [] Rows: [-5] Date: [-5] Time: [0,50] [] [AM] PM

Project Name: 13 / 050 / 105
Location: Dry Creek WRF.
Address: 8911 Camps too / Rd.
City: Cheyenne State: [N Zip Code: 8200]
City: Cheyenne State: [N Zip Code: 83 00] Samples Collected by: Chet BubM. [Date/Time: 2-25-13/10:304m]
Analytical Certification
This certification must be completed by the Analytical Laboratory performing service for the Cheyenne Board of Public Utilities and submitted with each "Analytical Report.
"I certify that these analysis and resulting report (s) were prepared under my direction and supervision in accordance with a system designed to assure that qualified personal properly analyze all samples and accurately report the results. I certify that all analysis were performed in accordance with method approved for wastewater under the latest revision to 40 CFR Part 503 Sludge Regulation. Based on my inquiry of the person or persons who manage the system, or those person directly responsible for analyzing, the wastewater samples and generating the report (s), the analysis, report, and information submitted is to the best on my knowledge and belief, true, accurate, and completed."
Name of Laboratory: Dry Creek WRF.
Address: 8/1/ Campstool Rd.
City: Cheyenne State: Ny Zip Code: 82007.
Name of Analyst: This Certification is signed by:
I his Ceremeation is signed by
Date: 6 28 - 13 Time: 6800 JAM [] PM

Cheyenne Board of Public Utilities Water Reclamation Laboratory

Chain of Custody and Analytical Request Record
PLEASE PRINT CLEARLY, provide as much information as possible

Page _		_ of <u></u>
• -	-	_ —

Client's Name Dry Crapkwith Contact Name: Sampler's Name (if other than Contact):							
Report Required For:	Number of ANALYSIS REQUESTED	The sample Same					
12 War K	Containers Sample Type	Preserved Type Information Completed	ם				
13,030/ils 2012 D Lows 1-5	A W S V B O Air Water Soils/Solids Yegetation Bioassay	HNO ₃ Grab (pH, Field Analysis, etc.) H2SO ₄ or etc.) HCL Composite HCL None					
SAMPLE IDENTIFICATION (Name, Location, etc.) Collection Date Time	Other MATRIX						
120N # 13 - ROW 1 2-25 9:34n	1365	na Gia					
2 2	Dv 46fad						
3 3							
4							
5 1 1 5	1 1 1 1	7, 1,					
6							
7							
Custody Record MUST be	Date/Time: Received by:	Date/Time:					
Signed Sample Disposal: Return to client:	Lab disposal:	Log# 574					

Copies to:

White - Book in Laboratory

Yellow - Laboratory Hard Copy

Pink - Client

Attachment: #4. Dry Creek Water Reclamation Facility

F. Pathogen reduction is accomplished through anaerobic digestion. The primary and secondary digested sludge is treated in the absence of air for mean cell residence time and temperature between 25 and 35 days at 92 to 100 degrees Fahrenheit. Air dried sludge is obtained with a tractor aerator on paved drying beds and on site unpaved storage area in windrows that are turned approximately once a month dependant on the weather conditions.

The Biosolids production (dry weight) at the Dry Creek WRF is over 1500 metric tons a year. Therefore samples are collected six times a year (February, April, May, June, August, October, and December). The laboratories analyze the dry samples for metals, nutrients, organics pathogens, volatile solids and total solids.

CERTIFICATION STATEMENT

I certify under the penalty of law, that the pathogen requirements in Part I.C.3, the management practices in Part I.D (if necessary) (including the practice in part I.D.13 if the table 4 annual pollutant limits are used) and the site restrictions in Part I.C.2 (if necessary) have been met. This determination has been made under my direction and supervision in accordance with the system designed to assure that qualified personnel properly gather and evaluate the information used to determine that pathogen requirements, the vector attraction reduction requirements, the management practices and the site restrictions have been met. I am aware that there are significant penalties for false certification including the possibility of imprisonment.

Signature

Jim Hughes, Manager

Attachment: #5. Dry Creek Water Reclamation Facility

G. Vector attraction reduction requirements are met through anaerobic digestion when there is thirty eight percent or more reduction in volatile solids. Volatile solids destruction is measured weight by volume average ((Vol. Solids Reduction = VS in - VS out / (VS in -((VS in * VS out)) (Use Average). The sludge is also air dried in windrows for further vector attraction reduction. The dry solids in windrows are between 65% to 80% total volatile solids reduction before land application.

RE: Flows From: Primary North and Primary South Raw sludge Average: Total solids (change % to Mg/l (10000) (NRS & SRS): Total Vol Solids (NRS & SRS): Total C-2 (wasting) cake flow gal: C-1 (digested) Solids (mg/L) cake: C-1 Vol solids cake (mg/L): C-2 solids cake (mg/L): C-2 Vol Solids cake (mg/L) Cake flow from Rotary Drum Thicker to digester.

CERTIFICATION STATEMENT

I certify under the penalty of law, that the pathogen requirements in Part I.C.2, one of the vector attraction in Part I.C.3, reduction alternatives the practices in part I.D (if necessary) (including the practices in Part I.D.13 if the table 4 annual pollutant limits are used) and the site restrictions in part I.C.2 (if necessary) have been met. This determination has been made under my direction and supervision in accordance with information used to determine that the requirements, the vector attraction reduction requirements, the management practices and the site restrictions have been met. I am aware that there are significant penalties for false certification including the possibility imprisonment.

Signature

Jim Hughes, Manager

Attachment: #6. Dry Creek Water Reclamation Facility

H. Best management practices are accomplished by applying biosolids at a whole sludge application rate that is less than or equal to the agronomic rate for the specific site and plant species. The Biosolids are applied so that it does not adversely affect a threatened or endangered species.

Biosolids are not dispersed on sites that are flooded or snow covered, frozen ground with a slope of three percent or more to prevent run off into wetland or surface water. A buffer zone of thirty-five feet from waterways, stock wells, and surface water is observed. Biosolids land applications are prohibited to sites where the available phosphorous content of the existing soil exceeds 400 pounds per acre.

Stored Biosolids on the plant facility remain in windrows for two years or less. The Biosolids are land applied in the winter, spring and fall of the year, weather permitting. Biosolids and soil are analytically tested before disposal. Cheyenne's sludge management practice ensures compliance with both Federal and State parameters and provides for long term Biosolids procedures with little or no detriment to the environment, while enhancing the native grass and field crop production of those participating ranchers and farmers who utilize Biosolids as a fertilizer supplement and soil conditioner.

CERTIFICATION STATEMENT

I certify under the penalty of law that the pathogen requirements in Part I.C.2, one of the vector attraction reduction alternatives I.C.3, in Part the management practices in part I.D (if necessary) (including in the practices in Part I.D.13 if the table 4 annual pollutant limits are used) and the site restrictions in Part I.C.2 (if necessary) have been met. This determination has been made under my direction and supervision in accordance with the system designed to assure that qualified personal properly gather and evaluate the information used to determine that the pathogen requirements, the management practices and the site restrictions have been met. I am aware that there are significant penalties for false certification including the possibility of imprisonment.

Signature

Jim Hughes, Manager

Water Reclamation Division Attachment: #7.

Dry Creek Water Reclamation Facility

I. Site restrictions are first achieved through the quality of sewage sludge product which has been stabilized to reduce pathogenic organisms, which has been dried to a solids concentration of sixty percentile or greater and contains no hazardous or toxic compounds or chemicals in concentrations which exceed those authorized by the USA EPA REGION VIII and WYOMING DEQ for land application in Part C.1, Specific Limitations and Self Monitoring Requirements and Chemical Pollutant Limitations.

The dry sludge that is produced is class \underline{A} and \underline{B} which are applied primarily to range land. Before applying sewage sludge on rangeland, pastureland, farm land, or fields, soil samples have been collected and have had the appropriate soil analysis conducted.

The <u>Class B</u> Sludge with respect to pathogens has been in compliance with the entire site restrictions listed in Part I.C.2. No sludge or material derived from sludge exceeds the limits in Table 3 Part I.C.1. The <u>Class A</u> pathogen reduction limits in Part I.C.2 meets the first 4 vector attraction reduction alternatives in Part I.C.3. There are sufficient management practices used to prevent malfunctions and deterioration, operator errors and discharges which may cause or lead to the release of sludge to the environment, a threat to human health or a nuisance.

CERTIFICATION STATEMENT

I certify under the penalty of law, that the pathogen requirements in Part I.C.2, one of the vector attraction reduction alternatives in Part I.C.3, the management practices in Part I.D (if necessary) including the practice in Part I.D.13 if the table 4 annual pollutant limits are used) and the site restrictions in Part I.C.2 (if necessary) have been met. This determination has been made under my direction and supervision in accordance with the system designed to assure that qualified personnel properly gather and evaluate the information used to determine that the pathogen requirements, the vector attractions reduction requirements, the management practices and restrictions have been met. I am aware that there are significant penalties for false certification including the possibility of imprisonment.

Signature Signature

Jim Hughes, Manager



ANALYTICAL RESULTS

DRY CREEK WWTP LABORATORY

Cheyenne BOPU 8911 Campstool Road Cheyenne, Wyoming 82007 Phone: 307-635-3163 Fax: 307-635-6833

Date Sampled: 02/25/13

Date Received: 02/25/13

Sample Location: Zone C

Sample Matrix: Compost

Sampled By: CB

Date Reported: 03/05/13

Date Fecal Analyzed: 02/25/13 Date Solids Analyzed: 02/26/13

Analyst(s): mw

EPA Method/Total Solids:

SM 19th Ed 2540B

EPA Method/Volatile Solids: SM 19th Ed 2540E EPA Method/Fecal Coliform: SM 18th Ed 9221E (A-1 Media)

Row #	Total Solids %	Volatile Solids%	Fecal Coliform/ Dry Gram Sludge			
1	87.6	35.8	<371			
2	85.5	43.6	<380			
3	86.7	39.6	<375			
4	85.2	45.8	<381			
5	86.9	48.8	<374			
6	84.2	46.4	<386			
7	85.2	54.7	<381			

All data meets QA/QC requirements; please see QA/QC files in Dry Creek Laboratory.

 $NA = No\eta Analyzed$

ent Loader, Laboratory Supervisor

Page 1 of 1

Dry Creek WRF Laboratory For: Fecal, TS & VS

Identification Reporting: No. WYSL - 22934

Permit No. WYG - 650002

(Cheyenne BOPU) Dry Creek Water Reclamation Facility

Samples and Analytical

Quality Assurance/Quality Control OA/QC

Date: 2-25-13 | Time: 0.5-0 | [] AM [] PM

Analytical Sampling Records (Cheyenne BOPU) Dry Creek WRF Laboratory

[] Dates and time of samples collected
[] Sampling location documented
[] Sampling types appropriate
[] Sampling volumes recorded
[] Name of person sampling
[] Types of sampling containers
[] Methods of preservation
[] Sampling quality assurance/ quality control QA/QC available
[] Pollutant limits red flagged if over mg/kg (Table 1,2,3,4 and Section 503.13) (Class A and B Biosolids)
[] Certification statement signed with each laboratory analytical report:
1. Pathogen reduction
2. Vector attraction reduction operates at Dry Creek WRF analysis samples. Results from daily sheets and results, recorded daily.
3. Management Practices
4. Site restrictions
[] Class A sludge: average temperature, (volatile solids percent) and total solids Dry sludge) once a month. Turn rows once a month, <u>weather permitting</u> .
[] Chain of custody recorded
Date: 7 - 25 - 13 Time: 10:50 [] AM [] PM

Analytical Records From: (Cheyenne BOPU) Dry Creek WRF To: (Cheyenne BOPU) Dry Creek WRF Laboratory

Date: 2-25-13 | Time: 10'57 | [] AM [] PM

Analytical Records From: (Cheyenne BOPU) Dry Creek WRF To: (Cheyenne BOPU) Dry Creek WRF Laboratory

[] Date and time of sample
[] Name of analyst
[] Analytical methods used
[] Analyses and calculation results properly documented or verified
[] All analysis are reported on dry weight basis with the exception of volatile solid or total solids in percent. (1quart plastic bag 450 grams) (7 quart plastic bags 3150 grams).
[] Volatile solids and total solids samples need to be analyzed six times a year for Class B Biosolids and 12 times a year for Class A Biosolids.
[] Analytical quality assurance/quality control (QA/QC) available
[] Analytical results available
[] Chain of custody record

Zone: C | Rows: 1 - 7 | Date: 2-25-13 | Time: 10,50 | [] AM | PM

Analytical Sample Containers From: (Cheyenne BOPU) Dry Creek WRF To: (Cheyenne BOPU) Dry Creek WRF Laboratory

Dry Sludge for fecal results in MPN, and percent solids for Class A or Class B Biosolids. 1 quart Plastic bags 450 grams: 7 Quart Plastic bags total of 3150 grams. Fecal samples and results are analyzed at the Dry Creek WRF Laboratory in with six hours of the holding time. The results of fecal samples in (MPN) and (percent solids) need to be analyzed in, *February, April, June, August, October, and December. **January, March, May, July, September and November; test for TS and VS. Class A test for Helminth ova density limits > 1 egg/4g TS; Enteric virus density limits of > 1 PFU/4g

- 1. *' **Class A sludge < 1000 MPN/gram. (Test 12 times a year for TS and VS).
- 2. * Class B sludge < 2,000,000 MPN/gram
- 3. Percent solids, 75 % or better for Class A Biosolids and Class B Biosolids.
- 4. Chain of custody record

Zone: Rows: 1 - 7 Date: 2-2.5-13 Time: 10/57 [] AM [] PM

Project Name: Biosolid 5.
Location: Dry Creek WRF.
Address: 89// Campstoo/RI City: Cheyenne State: [N. y.] Zip Code: 7207.
City: Cheyenne State: [N. Y.] Zip Code: 7207.
Samples Collected by: Chet Bould .[Date/Time: 2-25-13/10:30]
Analytical Certification
This certification must be completed by the Analytical Laboratory performing service for the Cheyenne Board of Public Utilities and submitted with each "Analytical Report.
"I certify that these analysis and resulting report (s) were prepared under my direction and supervision in accordance with a system designed to assure that qualified personal properly analyze all samples and accurately report the results. I certify that all analysis were performed in accordance with method approved for wastewater under the latest revision to 40 CFR Part 503 Sludge Regulation. Based on my inquiry of the person or persons who manage the system, or those person directly responsible for analyzing, the wastewater samples and generating the report (s), the analysis, report, and information submitted is to the best on my knowledge and belief, true, accurate, and completed."
Name of Laboratory: Dry Creek WR/=.
Address: 89// Campstool Rd
City: Cheyenne State: Y Zip Code: 82007.
Name of Analyst:
This Certification is signed by:
Date: 6.28-13 Time: //:30 AM [] PM

Cheyenne Board of Public Utilities Water Reclamation Laboratory

Chain of Custody and Analytical Request Record

PLEASE PRINT CLEARLY, provide as much information as possible

Page ____ of ___

——————————————————————————————————————	4 (128K)													
Client's Name:	1-1-14	Conta	ct Name:_	chet		1	1 1 1 m	11/1/	11	<u> </u>	Sampler's	Name (if c	other than Contact):_	
Report Required F りいんのしかり ユのトと く	For:			Number of Containers Sample Type A W S V B O Air <u>W</u> ater Soils/Solids <u>V</u> egetation <u>B</u> ioassay		ILYS	SIS	REC	UES	TED	Preserved HNO ₃ H ₂ SO ₄ 4°C HCL	Sample Type Grab or Composite	Other Information (pH, Field Analysis, etc.)	Analysis <u>Completed</u> Yes / No (Lab use only)
SAMPLE IDEN (Name, Loca		Collection Date	Collection Time	<u>O</u> ther MATRIX		9	2				None			
126886	Roul	2.24	1,30 AW	Phylip		appearance of the latest					MIT	GAYD		
2												and year		
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6	6	·		1								ı		
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Custody Record <u>MUST</u> be	Relinquished by:	A. A.		Date/Time:	-13			Rece	ived by	y:		À		Date/Time:
Signed	Sample Disposal:	Return to				b dis							Log#	673

Copies to:

White - Book in Laboratory

Yellow - Laboratory Hard Copy

Pink - Client

Attachment: #4. Dry Creek Water Reclamation Facility

F. Pathogen reduction is accomplished through anaerobic digestion. The primary and secondary digested sludge is treated in the absence of air for mean cell residence time and temperature between 25 and 35 days at 92 to 100 degrees Fahrenheit. Air dried sludge is obtained with a tractor aerator on paved drying beds and on site unpaved storage area in windrows that are turned approximately once a month dependant on the weather conditions.

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CERTIFICATION STATEMENT

I certify under the penalty of law, that the pathogen requirements in Part I.C.3, the management practices in Part I.D (if necessary) (including the practice in part I.D.13 if the table 4 annual pollutant limits are used) and the site restrictions in Part I.C.2 (if necessary) have been met. This determination has been made under my direction and supervision in accordance with the system designed to assure that qualified personnel properly gather and evaluate the information used to determine that pathogen requirements, the vector attraction reduction requirements, the management practices and the site restrictions have been met. I am aware that there are significant penalties for false certification including the possibility of imprisonment.

Signature

Jim Hughes, Manager

Attachment: #5. Dry Creek Water Reclamation Facility

G. Vector attraction reduction requirements are met through anaerobic digestion when there is thirty eight percent or more reduction in volatile solids. Volatile solids destruction is measured weight by volume average ((Vol. Solids Reduction = VS in - VS out / (VS in -((VS in * VS out)) (Use Average). The sludge is also air dried in windrows for further vector attraction reduction. The dry solids in windrows are between 65% to 80% total volatile solids reduction before land application.

RE: Flows From: Primary North and Primary South Raw sludge Average: Total solids (change % to Mg/l (10000) (NRS & SRS): Total Vol Solids (NRS & SRS): Total C-2 (wasting) cake flow gal: C-1 (digested) Solids (mg/L) cake: C-1 Vol solids cake (mg/L): C-2 solids cake (mg/L): C-2 Vol Solids cake (mg/L) Cake flow from Rotary Drum Thicker to digester.

CERTIFICATION STATEMENT

I certify under the penalty of law, that the pathogen requirements in Part I.C.2, one of the vector attraction in reduction alternatives Part I.C.3, the management (including in part I.D (if necessary) practices in Part I.D.13 if the table 4 annual pollutant limits are used) and the site restrictions in part I.C.2 (if necessary) have been met. This determination has been made under my direction and supervision in accordance with information used to determine that the pathogen requirements, the vector attraction reduction requirements, the management practices and the site restrictions have been met. I am aware that there are significant penalties for false certification including the possibility imprisonment.

Signature

Jim Hughes, Manager

Attachment: #6. Dry Creek Water Reclamation Facility

H. Best management practices are accomplished by applying biosolids at a whole sludge application rate that is less than or equal to the agronomic rate for the specific site and plant species. The Biosolids are applied so that it does not adversely affect a threatened or endangered species.

Biosolids are not dispersed on sites that are flooded or snow covered, frozen ground with a slope of three percent or more to prevent run off into wetland or surface water. A buffer zone of thirty-five feet from waterways, stock wells, and surface water is observed. Biosolids land applications are prohibited to sites where the available phosphorous content of the existing soil exceeds 400 pounds per acre.

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CERTIFICATION STATEMENT

I certify under the penalty of law that the pathogen requirements in Part I.C.2, one of the vector attraction I.C.3, reduction alternatives in Part the management practices in part I.D (if necessary) (including in the practices in Part I.D.13 if the table 4 annual pollutant limits are used) and the site restrictions in Part I.C.2 (if necessary) have been met. This determination has been made under my direction and supervision in accordance with the system designed to assure that qualified personal properly gather and evaluate the information used to determine that the pathogen requirements, the management practices and the site restrictions have been met. I am aware that there are significant penalties for false certification including the possibility of imprisonment.

Signature

Jim Hughes, Manager 🥕

Water Reclamation Division Attachment: #7.

Dry Creek Water Reclamation Facility

I. Site restrictions are first achieved through the quality of sewage sludge product which has been stabilized to reduce pathogenic organisms, which has been dried to a solids concentration of sixty percentile or greater and contains no hazardous or toxic compounds or chemicals in concentrations which exceed those authorized by the USA EPA REGION VIII and WYOMING DEQ for land application in Part C.1, Specific Limitations and Self Monitoring Requirements and Chemical Pollutant Limitations.

The dry sludge that is produced is class \underline{A} and \underline{B} which are applied primarily to range land. Before applying sewage sludge on rangeland, pastureland, farm land, or fields, soil samples have been collected and have had the appropriate soil analysis conducted.

The <u>Class B</u> Sludge with respect to pathogens has been in compliance with the entire site restrictions listed in Part I.C.2. No sludge or material derived from sludge exceeds the limits in Table 3 Part I.C.1. The <u>Class A</u> pathogen reduction limits in Part I.C.2 meets the first 4 vector attraction reduction alternatives in Part I.C.3. There are sufficient management practices used to prevent malfunctions and deterioration, operator errors and discharges which may cause or lead to the release of sludge to the environment, a threat to human health or a nuisance.

CERTIFICATION STATEMENT

I certify under the penalty of law, that the pathogen requirements in Part I.C.2, one of the vector attraction reduction alternatives in Part I.C.3, the management practices in Part I.D (if necessary) including the practice in Part I.D.13 if the table 4 annual pollutant limits are used) and the site restrictions in Part I.C.2 (if necessary) have been met. This determination has been made under my direction and supervision in accordance with the system designed to assure that qualified personnel properly gather and evaluate the information used to determine that the the vector attractions reduction pathogen requirements, requirements, the management practices and the restrictions have been met. I am aware that there are significant penalties for false certification including the possibility of imprisonment.

Signature J Jim Hughes, Manager